

SMC'07

4th Sound and Music Computing Conference

11-13 July 2007 Lefkada, Greece

Concerts, Installations, Demonstrations, Composers' Forum

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Welcome Statements

Welcome Statement from the Prefect of Lefkada

The Prefecture of Lefkada greets the participants of the 4th International Conference on Sound and Music Computing which will be hosted on our island from July 11 to July 13, 2007. It is our great pleasure to welcome members of the international community of science and art of music, Greeks and foreigners, which will convene here in order to engage in a prolific exchange of scientific views and to present results as well as ongoing research in Music Information Technology.

The present era is beyond doubt one of science and technology, whose culture is characterized by the coexistence of tradition with technological progress. Technology, beyond satisfying practical needs, is also a source of inspiration for modern society. The two apparently disparate worlds of music – sound on the one hand and information technology on the other, can here unite in harmony, thereby opening new cultural and spiritual horizons.

For these reasons, we welcome the opportunities that the present event will present to its participants to meet and cooperate, to get acquainted with each others' work and exchange their knowledge. We are convinced that the conference will be a success, because it will contribute to the promotion of scientific knowledge in a spirit of collaboration, dialogue and solidarity.

At the same time, our distinguished visitors will have the opportunity to become familiar with the hospitable and civilized environment of Lefkada. On our island, they can enjoy the beauty of its natural environment, the calm and the harmony that it inspires, as well as the ample occasions for fun and relaxation that it presents. We hope that the experiences made here will confer to all a sense of what makes this island so special.

We thank all those that did their best for the realization of this conference. In particular, special thanks are due to Mrs Anastasia Georgaki, vice-president of the Conference, for her role in the decision process that resulted in the choice of this island as Conference venue.

We wish to all the participants fruitful results in their work and a pleasant stay on our island.

WELCOME

The Prefect of Lefkada

Kostas A. Aravanis

Welcome Statement from the Mayor of Lefkada

On behalf of the Municipality, the Municipal Council, and the Culture Center; I welcome you to Lefkada and cordially extend my

warmest greetings.

It is an undisputed fact that the field of music is just as influenced by modern technology and information science as all other sectors of human activity.

The 4th International Conference on Sound and Music Computing that will take place at the Culture Center of Lefkada from 11 to 13 July 2007, organized by the corresponding Departments of the University of Athens and the Ionian University following the proposal of our friend from Lefkada, Ms Anastasia Georgaki, focusses on research in Music related to modern technology and information science.

The Municipality of Lefkada, which is responsible for the function of the Culture Center; supports and furthers initiatives on topics directly related to contemporary issues in the Arts and Sciences and to cultural creativity in general.

With these thoughts I wish to express my congratulations and thanks to the above mentioned Universities, to Ms. Georgaki for showing deep care towards Lefkada, as well as to all those who helped in the realization of the 4th Sound and Music Computing Conference.

I am certain that this Conference, that takes place in a city endowed with a rich musical tradition and life, will be successful; I sincerely wish to all participants rewarding results and a creative and pleasant stay in Lefkada.

With cordial thanks,

Vasilis Fetsis

Mayor of Lefkada

President of the Culture Center

Concerts

Concert I (Wednesday, July 11, 2007, 13:15)

Lennart WESTMAN (Sweden): *Lapides*, for tenor and tape (5')

Conny Thimander, tenor (recorded)

The recorded electronic sound material to *Lapides* contains of four stones from the Sherry Bay at the Baltic Sea (at the island Gotland in Sweden) and singing parts in latin by the tenor Conny Thimander. All lyrics in the piece are in latin, and they originate from the German medieval mystic, poet and musician Hildegard of Bingen. They are slightly modified by the composer. Translation into English by Christin Zandin. The Latin lyrics in the piece are:

Lapides ventum sonantis verbi habentes

Stones, carrying the wind of the sounding word.

Rationalitas sum, ventum sonantis verbi habens

I am the potent cause, carrying the wind of the sounding word

Omne vitale de me radicatum est

In me the life force has its source

Integra vita sum, quae de lapidibus abscissa non est

I am the totality of life, that hasn't been carved free of the stone

Lennart Westman was born in the countryside of Sweden, in an environment characterized by silence and distant barking dogs in wintertime, thawing brooks and breeding curlews in springtime, by whining swifts and singing larks in summertime and the majestic blowing wind in autumn. He started his musical career as very young by playing in local pop groups. Later he studied classical guitar, harmony and counterpoint in Sweden and also spent some years in France and Spain. A growing interest for the sonic art brought him to EMS (Electroacoustic Music in Sweden) in the late 80s where he wanted to acquaint himself with electroacoustic music. Not until 1995, however, did he dedicate himself to this genre. Lennart Westman has completed the composition programme at EMS with teachers such as Lars-Gunnar Bodin and Rolf Enström. Thereafter he has studied instrumentation, orchestration and composition for professor Sven-David Sandström and composers Henrik Strindberg and Per Mårtensson. His works have been performed in Europe, the USA, Latin/Central America and Asia. One of his pieces was selected for performance in Hong Kong during the World Music Days in 2002. Westman composes electroacoustic music, instrumental and choral music. His music is comparatively tonal and is characterized by depth and spirituality. Lennart Westman is a member in: FST (Society of Swedish Composers), ISCM (International Society for Contemporary Music), SEAMS (Society for Electro Acoustic Music in Sweden), VEMS (Composers working at EMS - Electroacoustic Music in Sweden), SAMTIDA MUSIK (Contemporary Chamber Music Society).

Sotiris KOSTOUROS (Greece): *Perpetual Flow*, for tape (10')

Certain processes of the natural world that encompasses us, such as the recycling of water; the planet orbits e.t.c. are distinguished by a kind of repetitiveness. This is what constituted the source of inspiration for me. This is a stereo - mixdown version of the 8th - channel original version of the "Perpetual Flow". All the sound processing was accomplished in "Kyma" environment.

Sotiris Kostouros was born in Tripolis, Greece, in 1980. He studied Music, (with emphasis, on electroacoustic music composition), during the period 1999 – 2004. At the same period he also studied Piano performance and Fugue at the Municipal Conservatoire of Corfu. After the completion of his studies he entered the Master Program "Arts and Technologies of Sound", (directed by Pr. Andreas Mniestris), at the Ionian University, Department of Musical Studies which he graduated on May 2006. He has been teaching in public primary and secondary education institutions since 2003. Additionally, during the academic year 2004 – 2005 he has taught as a teaching assistant at the Ionian University's Music Department's undergraduate program. He has attended many seminars both as undergraduate and graduate student. His composition titled "Perpetual Flow" rise to prominence at the "33o Concours International de Music et d' Art Sonore Electroacoustiques de Bourges 2006".

Daniel BARREIRO (Brazil): *Maresia*, for 8-channel tape (11' 45)

Maresia (2005-2006), for electroacoustic sounds in 8-channels. *Maresia* means 'smell of the sea' or 'sea mist', in Portuguese. The work is inspired by the sea in two different ways: firstly, by the pleasant experience of being immersed and surrounded by water; and secondly, by the movement of the waves and the energy they release when they break – which cause the continuum of water to assume ephemeral, yet remarkable, shapes. *Maresia* was awarded the First Prize Ex-Aequo in the *Metamorphoses* Competition 2006 and a Mention in the *Bourges* Competition 2006 (Trivium - Program Music).

Daniel Barreiro (Brazil, 1974) composes mainly in the electroacoustic domain (acousmatic compositions for stereo and 8 channels, and mixed compositions for instrument and electroacoustic forces). His works have been recognised in prestigious international competitions such as *Bourges* (Prize and Mention in 2006 – Trivium: Abstract and Program Music, respectively); *Metamorphoses* (First Prize Ex-Aequo, in 2006); and *CIMESP* (Finalist, in 2005). His works have been presented in concerts and festivals in several countries in Europe and in the Americas. He holds a PhD from the University of Birmingham (UK), where he was an active member of *BEAST* (Birmingham Electro-Acoustic Sound Theatre) between 2003 and 2006.

Ioannis KALANTZIS (Greece): *SIM4 (System In Motion)*, for tape (7'45)

The sound material of this piece is entirely made on a program called "Vima", developed by myself in MaxMSP. "Vima" can work as a typical "drum machine", but also provides algorithms that extend the technique of "glitch and slice" into new aesthetic areas. In *SIM4* I use four algorithms employing repetition of small slices of samples, moving their start and end points to variable positions. As a result, this process can express a particular type of sound energy that I was interested to develop

as a formal element. The form follows a strict scheme of "stuck" repetitive slices and energetic gestures in a level that the listener can feel the intensity of energy and the same time distinguish the fast alterations of sound information.

A native of Chalkida, Greece. He obtained a diploma of classical guitar with Evangelos Asimakopoulos at the National Conservatory of Athens. He studied music theory and composition with Yannis Ioannidis at Nakas Conservatory and electroacoustic music with Henri Kergomard in Athens. He continued his studies of composition and computer music at the Conservatoire National Supérieur de Musique de Lyon, France with Philippe Manoury, Marco Stroppa, Dennis Lorrain and Robert Pascal (diploma DNSEM with distinction). He has also attended master classes with Philippe Schoeller, Allain Gaussin, George Crumb, Klaus Hubert, Peter Eotvos, Gerard Griskey, Ivan Fedele, Michael Levinas, Jonathan Harvey, Gilbert Amy, Michael Jarrell, Francois Bayle, David Wessel, and Miller Puckette. He has received distinctions and prizes in contests as «CIMESP» (Sao Paulo, Brazil), « Papayioannou » (Athens Greece), « Pierre Schaeffer » (Pescara, Italy), and «Grame/EOC» (Lyon, France). His work has been selected for the official concerts of the International Computer Music Conference (ICMC'99 Beijing, China), (ICMC 2001 Havana, Cuba), (ICMC 2003 Singapore), and (ICMC 2005 Barcelona, Spain). His pieces has been performed worldwide in many other international events in England, Belgium, Ukraine, Poland, Switzerland, S. Korea, Chile, Australia, and USA. He had commissions from the Athens Concert Hall, the National Centre of Music Creation of France (Grame) and the Ministry of Culture of France. He is founding member of the Hellenic Electroacoustic Music Composers Association (HELMCA). His work has been released on CDs by UNESP/FASM (Brazil) and PeP/CEC (Canada).

Fabio CIFARIELLO CIARDI (Italy): *Games IV*, Audio and Video (13')

Giulio Latini and Silvia Di Domenico, video

Eyes ought to force their nature to stop frantic movements [...] raving but still lucid games [...] torn forms, obsessively repeated [...] an unremitting recall to a fleeting reality [...] (Marina Antonucci) Games may be far from pleasure and close to interactions, confrontations, conflicts. That's why Games IV music is based on contacts, fugues, conquests and defeats of sonic organisms that dwell different virtual spaces. It's a metaphorical and surrealistic 'audio game' driven by the contrabass. Games IV was finalist at VideoEvento d'Arte Competition 2000 (Torino, Italy)

Fabio Cifariello Ciardi (1960) studied composition, electronic music and musicology at Rome Conservatory of Music and Bologna University. He also studied with Tristain Murail, Philippe Manoury (IRCAM) and Franco Donatoni (Accademia S.Cecilia). In the field of both instrumental and electroacoustic music he has developed theories and methods on the possible relationship between sounds and a common long-term memory of the listener. His compositions have been awarded prizes at various international competitions. His music is published and recorded by Edipan (Rome), RivoAlto-Casier (Treviso), Symposium-CAT (Trento), International Computer Music Association (San Francisco, USA), Unesco CIME-Cultures Electroniques (Bourges, France), Rai Trade (Rome). He has developed softwares for dissonance calculation and sound spatialization. In 2003 he patented sMax, a toolkit for financial market data sonification. Cifariello Ciardi collaborates with the Department of Psychology of "La Sapienza" University in Rome and is a member of ECONA-Interuniversity Center for Research on Cognitive Processing in Natural and Artificial Systems (<http://studens.psi.uniroma1.it>). He has published several works dedicated to music analysis, psychology and policy of music. As a musicologist, he has collaborated with the Research Institute for Music Theatre, Rome and with RAI-Radio3. He teaches composition and analysis at Perugia Con-

servatory and has founded, together with other composers, the Edison Studio for producing and diffusing electroacoustic music.

Giulio Latini teaches Multimedia communication at the Faculty of Philosophy and Literature of the University of Rome "Tor Vergata". He has taught in courses and seminars in several european universities and research centres about audiovisual languages and techniques. Since 1987 he has directed video works and documentaries that were selected in several international festivals and broadcast by various national television channels in Europe, Egypt, South and North America. He recently published two books on cinema and media: *L'immagine sonora. Caratteri essenziali del suono cinematografico* (2006) and *Forme digitali. Figure del corpo nel paesaggio mediale* (2007)

Concert 2 (Wednesday, July 11, 2007, 20:30)

Ricardo CLIMENT (Spain/UK): *Wall Woodpeckers (Mauerspechte)*, for 8-channel tape (9' 11)

On the 9th of November, 1989, the so called Wall-Woodpeckers hammered and knocked down the Berlin Wall. Since then, politicians, philosophers and artists have analysed the consequences and the impact of this action on Berliners. This music work provides a unique opportunity for the Wall to express its own version of the facts. A sonic discourse made with chisels, screwdrivers, hammers and cheers surrounded the DDR like thousands of speakers in a circle. East and West are sonically represented as contrasting music materials, which attempt several ways of integration throughout the piece. 332 samples of the 'Wall' no longer than 1500 milliseconds are being collaged into multiple forms, convolved and transformed. They are merged together with a sustained timbre made of synthetic sounds (physical models of circular plates designed by Stefan Bilbao). This music scenario conforms a pallet of gestures which sonically describes the euphoria, intensity and fears of the night of the fall of a Wall, which 16 years later was still alive in many Berliners' mind. *Wall Woodpeckers* was entirely created at the Elektronische Studios, Technical University of Berlin, thanks to Folkmar Hein and his team. *Wall Woodpeckers* has been published on CD by German label Edition RZ founded by Robert Zank. Inventionen-CD Vol. 6 and produced by Berliner Künstlerprogramm des DAAD. Later in 2007 it will also be published by RedASLA, Vol. 2

Ricardo Climent is a composer who focuses on experimental music technology in the compositional and performance environment. His musical output ranges from pure acousmatic works (for tape) to instrumental composition, including mixed works, which incorporate electronic expression to acoustic instruments and make use on sensors technologies. His research includes cross-disciplinary projects combining music and other arts or sciences, aiming to push his own boundaries and existing ones. He is currently working as one of the principal researchers at NOVARS, Research Centre for Electroacoustic composition, Performance and Sound-Art, University of Manchester, UK, started in 2007. Before he was lecturer at the School of Music and Sonic Arts, Queens University. He has served as resident composer at the Conservatorio de las Rosas, Morelia, Mexico thanks the a Unesco-Aschberg award, resident researcher at the Kunitachi College of Music, Tokyo, sponsored by the Arts Council of Northern Ireland and the Daiwa Anglo-Japanese foundation, two years resident composer at the JOGV orchestra in Spain, also resident at the Elektronisches Studio -Technical University of Berlin among others. Ricardo was recently commissioned by The Instituto Valenciano de la Musica, Pedro Carneiro, C.A.R.A. (Celebrating Arts in Rural Areas), Grup de Percussio Amores, JOGV, Ensemble las Rosas-Mexico, Xelo Giner-Kazuhisa Ogawa, Carlos Gil, Third Practice Festival- Virginia, Kontakte Percussion group and Spanish Brass Luur Metals. He holds a PhD in Composition and also a Master in Music Technology from Queen's University of Belfast and incidentally, also degrees in Economics by Universidad de Valencia, Spain and FUFAP-Alcala de Henares.

Leigh LANDY (UK): *Oh là la radio*, for 8-channel tape (8' 45)

This work, like many of my recent compositions, focuses on recycling sounds (also known as appropriation, plundering, sampling, etc.). 'Oh là la radio' is a GRM commission based on their desire for composers to plunder archives. In this case, diverse French radio programmes covering very few days over the last year were recorded and used as source material. Other than the initial sound, which may be familiar to sonic art enthusiasts, all material was recorded from broadcasts during this period. The role I chose was simply to re-compose what was supplied. For those familiar with the French radio, many familiar voices and logos can be heard. The piece seeks to take the known, tilt it ever so slightly and re-present it as a sound-based artwork. Humour is one of the work's key elements. A follow-up British version is planned. As far as copyright is concerned ... don't ask!

Leigh Landy holds a Research Chair at De Montfort University where he directs the Music, Technology and Innovation Research Centre. His research is divided between creative and musicological work. His compositions include several for video, dance and theatre. He has worked extensively with the late playwright, Heiner Müller; the new media artist, Michel Jaffrennou and the composer-performer, Jos Zwaanenburg and was composer in residence for the Dutch National Theatre during its first years of existence. Currently he is artistic director of *Idée Fixe* – Experimental Sound and Movement Theatre. His musicological publications focus on the studies of sound-based music including important accessibility issues. He is editor of "Organised Sound: an international journal of music technology" (Cambridge University Press) and author of three books including "What's the Matter with Today's Experimental Music?" and "Experimental Music Notebooks. His fourth book, "Understanding the Art of Sound Organization" will appear this autumn (MIT Press). He directs the ElectroAcoustic Resource Site (EARS) project and is a founding member of the Electroacoustic Music Studies Network (EMS).

Nikolas VALSAMAKIS (Greece): *maigua II*, for MIDI accordion and real-time computer music system (8')

**Anastasia Georgaki, MIDI accordeon
Nikolas Valsamakis, real-time computer music system**

Maigua II is a dream sequence in 5 movements. All the sound material is processed, assembled and specialised in real-time by a computer music system. The system captures and interprets musical gestures by the performer. Throughout the piece various microtonal scales are visited and interweave. The piece reveals the composer's late interest in real-time algorithmic music and live gesturing within a performance context.

Nikolas Valsamakis is a composer and performer of electroacoustic music. He is especially interested in the directions of algorithmic composition, microsound, nonstandard synthesis, interactive systems, live electronics and soundscape composition. He explores and applies computer technology and electronics in the creation of his own meta-tools for music composition as well as in the construction of musical meta-instruments for live performance. In 2004 was invited composer in residence in the Center de Creation Musicale Iannis Xenakis (CCMIX) in Paris. He is a founding member of the Hellenic Electroacoustic Music Composers Association (ΕΣΣΗΜ - HELMCA) and the Hellenic Society of Acoustic Ecology (ΕΕΑΕ - HSAE). He is lecturer in the Music Technology & Acoustics Department of TEI of Crete, in Rethymnon, Greece.

Katerina TZEDAKI (Greece): *Jyoti*, for 8-channel tape (7')

Jyoti is the Hindi word for *light*. Light is a form of energy, which usually is perceived by us as something coming from outside. Various spiritual traditions speak also about inner Light and Sound. This seemingly dual notion of light and transitions between inner and outer are used as construction metaphors in this piece.

Katerina Tzedaki, born in Greece (Rethymno), studied in Athens (1984-1991) with I. Ioannides, S. Vasilieades and D. Kamarotos and has been coordinator of the Computer Music Lab of the Program of Psychoacoustics of the Aristotle University of Thessaloniki (IPSA) (1994-2000). She completed her MA in electroacoustic music composition at City University (2002). She is currently teaching at the Technological Educational Institute of Crete while at the same time she is a research student in electroacoustic music composition at De Montfort University (with Simon Emmerson). She is a member of the Hellenic Association of Electroacoustic Music Composers, Sonic Arts Network and ICMA.

Jean-Claude RISSET (France): *Elementa*, for 4-track magnetic tape (22')

Commissioned by the French Ministry of Culture for the fiftieth anniversary of *musique concrète* and realized at INA-GRM, Paris (1998), *Elementa* is deliberately electroacoustic. Popular electronic music resorts to sampling and mixing : it thus catches up with processes initiated by *musique concrète* half a century earlier: I am neither connoisseur nor fond of techno, but in this work I have here and there picked up fragments of my own compositions, but mostly sound samples taken from "the very bone of nature" - simple sounds or soundscapes, or more often spectra, atmospheres, impulses, elaborated and inlaid in the musical stuff, or weaved into figures, phrases, developments and sections : a compositional work, but considerate towards the autonomy of organic objects and their dynamics of flux, duration and energy. The piece evokes the four elements of Empedocle - which corresponds to the four states of matter : solid, liquid, gaseous, ionized (plasma). The sound material consists mostly of recordings of sound phenomena from the four elements. The origin of the sound sources is not hidden: the composition relies upon their connotations and their symbolic implications. The piece also includes sounds synthesized with the Music V program and the Synclavier digital synthesizer, which mimic gaits specific to the four states of matter : "solid" sound objects, fluid textures, eolian and noisy puffs, blows and breaths, "ionized" timbres, shrill, agile and dissociated. From the fire, the vocalizations for Irène Jarsky and Maria Tegzes emerge as Pythia's incantations. The sounds have been processed and edited in INA-GRM studios, using the Pro Tools et GRM Tools software. The original version is 4-track. The elements are evoked in the following order :

- Aqua. Our primal liquid medium - evoked by the water and also by the fluidity of melted materials : inharmonic textures that will be solidified into bell-like tones in the fourth section. Water drips, flows, laps, breaks - brook, torrent, river, cataract, all going down to the sea.
- Focus. Fire is ambivalent: warm and terrifying, crackling, quick, blazing, consuming and destructive. Atomized sounds, always moving. The wind sets fire in bushes. The crackling excites resonant filters at its own rhythm. The fire grows and seems to flood the flaming vocalizations. At the end, the fire rotates in the direction of the stars - celestial fire balls.

- Aer: The slaps of the flute are echoed by eolian puffs in reeds, overblowing into pipes, the air which both sustains and vibrates, set into motion by insect wings or nozzles. At the end, a round of the seven winds.
- Terra evokes our vital sphere, with the mineral, vegetal and animal order: The solid state of matter is illustrated through its different forms of vibration: rolling, friction, percussion, creaking, plucking, explosion ... After a long expectancy and a passacaglia of pebbles, everything is rocked: in an avalanche, even earth and stones flow.

Elementa is recorded with 4 other works on CD Risset- Elementa, INA C1019.

I thank François Bayle, Daniel Teruggi and François Donato.

Jean-Claude Risset: Born 1938. Works three years with Max Mathews at Bell Laboratories to develop the musical resources of computer sound synthesis: imitation of real timbres (brass synthesis, 1965; pitch paradoxes, synthesis of new timbres and sonic development processes, 1967-1969). Writes many musical works, most of which resort to computer synthesis in conjunction with instruments or human voice. Publishes a catalog of computer synthesized sounds (1969). Sets up computer sound systems at Orsay (1970-1971), at the University of Marseille-Luminy (1974), and at IRCAM, where Pierre Boulez asks him to head the Computer Department (1975-1979). As a composer in residence at the Media Laboratory, MIT (1987-1989), implements the first real-time interaction between performer and computer with acoustic piano sounds. Presently "Directeur de recherche" emeritus, CNRS, works on computer music in Marseille. Among other distinctions, Golden NICA, Ars Electronica, 1987; Grand Prix National de la Musique (France), 1990; Gold medal, Centre National de la Recherche Scientifique, 1999. Chevalier de la Légion d'Honneur, Commandeur des Arts et Lettres.

Concert 3 (Thursday, July 12, 2007, 13:15)

PerMagnus LINDBORG (Sweden/Norway): *Le mammouth englouti*, for 4-channel tape (6')

Le mammouth is the brother of *ConstipOrat*; both pieces are for loudspeakers only, both pieces are musical fantasies around the orator Mao Zedung, both pieces deal with timing: abrupt cuts between segments, or smooth transitions. Both pieces are almost entirely made from recordings of Mao's voice. The source material is analysed and treated with to become more polished, or more un-polished, sometimes flattering, sometimes terrifying, occasionally like silky persuasion, often like rough barking.

PerMagnus Lindborg (Sweden/Norway 1968) studied piano performance with Kerstin Nylander, composition with a.o. Olav Anton Thommessen and Klas Torstensson and music computing at IRCAM with a.o. Mikhail Malt. He obtained a Candidatus Magisterii in composition from the Norwegian Academy of Music, Oslo in 1995, and a DEA/Master in musicology of the 20th century, with a thesis about music interactivity, from Université Paris-4 Sorbonne, Paris in 2003. He received the Cultural Ministry's Young Artist Award in 1998 and in 1999. After having taught electroacoustic composition at ENM, Montbéliard, he is currently a Lecturer in Music Technology at LaSalle College for the Arts in Singapore. He is also a Visiting Lecturer in Composition at Ho Chi Minh City Conservatory, as part of the {transposition} cultural exchange between Vietnam and Norway. Lindborg's main research interests lie in CAAC (Computer-Assisted Analysis and Composition), interactivity in music performance and rhetorics as a metaphor for composition. Peer-reviewed articles have been published by SpringerVerlag and IRCAM (forthcoming). His compositions for soloists, ensembles and interactive electronics are published by MIC (Norway) and ABRSM (UK). Highlights include "TreeTorika" for saxophone and chamber orchestra performed by Ensemble Ernst at Ultima Festival 2006, Oslo; "khreia" for orchestra, First Prize winner at Stavanger Symphony Orchestra Nordic Composers' Competition 2002; "Extra Quality#2" for dancers and electronics, commissioned for the Agora Festival at Centre Pompidou 2002, Paris; "Leçons" for saxophone and computer, composed at IRCAM 1999, Paris; "Nermal SonoSofisms", Audience Price winner at Forum 1996, Montreal. Lindborg's music has been released on ECM, on Daphne and, with sound artist group freq_out, on Ash International. Projects for 2007 include conference papers at DMRN (Leeds), IRCAM Forum (Paris) and SMC07 (Greece), an installation at Land Foundation (Chiang Mai) and a new work for Norwegian Ensemble Bit20 for {transposition} in Saigon.

Apostolos LOUFOPOULOS (Greece): *ICARUS*, for tape (13')

Icarus was composed in summer 2006 utilising recordings from the natural environment of the island of Corfu. In this work the action of 'flying' is approached through a variety of sound-behaviours (fluttering, quick noise passages, air motion), which appear to interact with a continuously changing, sometimes 'natural', sometimes abstract background. The work is inspired from the myth of Icarus, and metaphorically relates to the effort of human to reach the sky and go beyond the limits of his biological nature. A sum of different 'flying', evolving behaviours – from bird-like to jet-like sounds – presents this human struggle throughout the work. Towards the end the context

becomes repetitive and 'rhythmic', indicating the continuous attraction and undying human desire to reach the 'sun', the symbol of superiority and perfection. This work is part of the "Hellenic Soundscape Research and Study" program, funded by the Hellenic Ministry of National Education and Religious Affairs' Operational Programme for Education and Initial Vocational Training (O.P. "Education") and coordinated by the Electroacoustic Music Research Lab of the Music Department of Ionian University.

Apostolos Loufopoulos was born in Greece, 1974. He studied electroacoustic music at the Ionian University of Corfu (Music Degree - 1999) and at City University, London (PhD in electroacoustic composition – 2005). He has attended seminars on contemporary composition and music technology at IRCAM (Paris, Academie d'ete, 1998), and he has participated in many electroacoustic music concerts, and in well-known international festivals and conferences on the twentieth century music, including ICMC (2003-2005), L'Espace Du Son (2002-03), Cinema for the Ear / DIEM (2002), and others. He has been awarded prizes at international competitions, such as Prix 'NOROIT-Leonce Petitot' 2002, Bourges 2003, Prix 'SCRIME' 2003, 'Metamorphoses 2002-2004', 'Space of Sound 2004', 'Musica Nova' 2004, 'Franco Evangelisti' 2006. His works have been performed in Greece, United Kingdom, USA, France, Belgium, Denmark, Austria, Hungary, Singapore, Canada, Argentina, Chile, and have appeared on different CD collections (Ionian University, Musiques et Recherches, INA-GRM / Scime-Noroit), on the radio (France-UK-Canada) and on the internet. He is a member of Sonic Arts Network, ESSIM (Greek composers electroacoustic music association) and of Project ITINERANT. Apostolos Loufopoulos works as a freelance composer, music producer and teacher. His music is highly influenced by the sound of the natural environment. In 2006 he began a post-doctoral research at the Ionian University-Greece involving observation / systematic recording of real-world soundscapes and composition of electroacoustic music based on the recorded material.

Jean Louis Di SANTO (France): *Ruthmos*, for tape (11' 55)

This piece is based on this quotation by Emile Benveniste who rediscovers the sense of the word "ruthmos" before Plato: "... Ruthmos, according to the context where it is given, indicates the form in the moment that it is assumed by what is moving, mobile, fluid, the form of what does not have consistency: it is appropriate for the pattern of a fluid element, an arbitrarily modeled letter, a peplos that one arranges with his liking, It is the improvised, temporary, modifiable form" ... Saxophones by Pauline Alla.

Jean Louis Di Santo was born in 1957. He studied Literature, Latin and ancient Greek at the university of Bordeaux III. He is the recipient of several awards including the 2005 Bourges and Phonurgia Nova competitions. He participate regularly with the SCRIME (Studio de Création et de Recherche en Informatique et Musique Electroacoustique), in Bordeaux, and played in several festivals (Syntheses, Futura, Musicacoustica...). He is specially interested in the relations between sound and meaning, he studied linguistic and semiotic by himself and collaborates with the MIM (laboratoire Musique et Informatique de Marseille). He participates in conferences in France and abroad (Marseille in 2005, EMS06 in Beijing, I Congresso internacional de musica in Sevilla 2006, JIM'07 in Lyon). He teaches electroacoustic music in school and for the University of Bordeaux.

Filippos THEOCHARIDIS (Greece): *Improvisation I*, for tenor saxophone and live processing (10')

Andreas Mniestris, saxophone

Philippos Theocharidis, Live electronics

Philippos Theocharidis was born in 1974 in Thessaloniki, Greece. He studied Electronic music and Electronics at Keele, and Music Technology at Newcastle-Upon-Tyne, UK. Since 2000, he has taught Electronic Music at the University of Macedonia, Thessaloniki, and worked as a recording and live sound engineer. He teaches Sound Recording and Music Technology at the Ionian University, Corfu since 2007. At the same time, he is a doctoral candidate at the Ionian University, studying under Andreas Mniestris.

Anargyros DENIOSOS (Greece): *Chant*, for flutist, audience and electronics (12')

Katerina Zenz, flute and other live sounds

Nikos Palamaris, programming and sound projection

Chant 2007. Traces of a curve (with certain fractal properties) which has drawn, partially erased, reconsidered and redrawn a number of times. Music for flutist (Katerina Zenz), audience and electronic treatments. The rather subtle use of technology consists of presenting, transforming and enhancing inherent characteristics of the actual sounds of the flutist.

Anargyros Deniosos, overall concept, composition of musical material and structures, algorithmic design and sound projection. Composer and musicologist. Born 16/08/1962, Zurich, Switzerland. Lives and works in Athens, Greece. His works explore and interconnect a number of his interests, namely 20th century music (especially the experimental tradition), Ethnomusicology, Contemporary Art and Literature, Modern Scientific Theories (especially Chaos and Complexity).

Concert 4 (Thursday, July 12, 2007, 20:30)

Panayiotis KOKORAS (Greece): *Breakwater*, for Piano and electronics (8' 20)

Ernis Theodorakis, piano

Breakwater for amplified piano and electronics was composed during the spring of 2000. When I started to work on the piece, I was thinking how I could expand the sound of piano – without losing the essential sensation of piano sound. It is the first piece of a project in process entitled Grand Piano Trilogy. This trilogy is based upon the sound of the piano. The sound source of the work comes from around, below and inside the piano played in various 'unconventional ways' (such as scraping, hitting and strumming). In *Breakwater* some of the materials are produced by prepared piano sounds derived by the table of John Cage's Preludes and Interludes for prepared piano (1960). The breaking waves, crashing onto a breakwater of very large boulders on the western shores of the Saronic Gulf in Greece, create a strong perceptual and psychological effect on the observer: After listening over and over again to a recorded sample of the sound of the splash over the breakwater, I made a phenomenological reduction, cutting away everything that masked the true nature of the phenomenon, and I applied it to the piano. The whole physical and emotional experience is now recreated through a metamorphosis of an abstract musical idea based more on the piano's 'explosive sound waves'. Many short and energetic samples constitute cells which are combined to produce phrases and to construct sections. The idea passes from one part to another through a constant sound modification. The amplified piano part is embodied to the composition as an extension of the tape part. Two panned microphones are placed inside the piano to the low and high registers in order to give an impression of sound's motion in the space. – P. Kokoras -.

Panayiotis Kokoras (Greece, 1974) completed his PhD course at the University of York in England and in September 2003 he returned to Greece. He is currently teaching Electroacoustic Composition at the Aristotle University of Thessaloniki and he is President of the (HELMCA) Hellenic Electroacoustic Music Composers Association. His array of achievements includes commissions from the IRCAM (Paris), FROMM (Harvard University), MATA (New York) and more than 27 distinctions and prizes at international competitions among others Pierre Schaeffer 2005 (Italy), Musica Viva 2005 and 2002 (Portugal), Gaudeamus 2004 and 2003 (The Netherlands), Bourges Residence Prix 2004 (France), Insulae Electronicae 2003 (Italy), Jurgenson Competition 2003 (Russia), Seoul international competition 2003 (Korea). Furthermore, his works are regularly performed at international festivals and concert series throughout Europe, Asia and America. His music appears in 15 CD compilations by Miso Musica, SAN / CEC, Independent Opposition Records, ICMC2004, LOSS, Host Artists Group, Musica Nova, Computer Music Journal (MIT Press) and others.

James HARLEY (Canada): *Wild Fruits 2: Like a ragged flock, like pulverized jade, for Alto flute* (10')

Katrina Zenz, flute

Wild Fruits 2: Like a ragged flock, like pulverized jade (2006). *Wild Fruits 2* is part of a cycle of electroacoustic works based on recordings of environmental sounds. The music is inspired by, and sometimes utilizes, text from *Wild Fruits* by Henry David Thoreau and Pilgrim at Tinker Creek by Annie Dillard. In *Wild Fruits 2*, the sounds are taken primarily from field recordings of birds, water, and wind. The live part for amplified flute is improvised, guided by fragments of text from Annie Dillard. This work has been supported in part by a McKnight Foundation Composer Fellowship.

James Harley is a Canadian composer and researcher, and is presently Associate Professor in the School of Fine Art and Music at the University of Guelph. He obtained his doctorate at McGill University in 1994, and prior to that spent six years living and studying in Europe. During that time, he attended the seminar in aesthetics with Iannis Xenakis at the Université de Paris from 1985-87, and composed two award-winning works using the UPIC graphic computer music system at CEMAMu. His book, *Xenakis: His Life in Music*, came out in 2004, and he has written numerous articles and reviews for publications such as *Computer Music Journal*, *Contemporary Music Review*, *Musical Times*, *Musicworks*, and *Tempo*. Harley's computer music compositions have been presented at festivals and conferences around the world.

Andreas K. DIKTYOPOULOS (Greece/Germany): *Genesis, for 4-channel tape* (2' 15)

Transformations of a stochastic signal lead the listener through time. The work has made with the software Sonic Cloud Generator Project programmed by the composer.

Andreas K. Diktyopoulos. Born in Darmstadt, Germany, in 1983 and raised on the small Greek island of Syros. Now resident in Athens, he studies on the undergraduate program of the Computer Science Department of the Technological Educational Institute of Athens. He is continuing his musical studies with Maria Aloupi (theory, composition and piano), Thanasis Zervas (composition and instrumentation), and Kostis Theos (violoncello). He has taken private electroacoustic music composition lessons with Tim Ward. Since October of 2005 he is a member of HELMCA (Hellenic Electroacoustic Music Composers Association). He is collaborating with the Centre for Music Composition & Performance (CMCP -Athens).

Miyuki ITO (Japan): *Into the forest of stars... , for baritone saxophone with electronics* (7' 27)

Athanasios Zervas, saxophone

This piece is dedicated to Taimur Sullivan. For the electronics part, I used the samples I recorded the sounds of saxophone, voices reading the poems both in Japanese and in English. Thanks to him, I could record several interesting sounds of baritone and bass saxophones and get inspired to create this piece. I have been recently also interested in using phonemes in my instrumental pieces, searching for subtle timbre. In addition, I started composing this piece at Djerassi Artist Residency, California in 2005. The magnificent sky and view surrounded by nature there gave me an inspiration. I also used the same text for soprano solo piece, *Into the Forest of Stars..(II)*.

Text: (from Manyô-syû, original in Japanese, ca. 8th Century AD)

* Both English and Japanese texts are used in the electronics and instrumental parts.

<i>On the sea of heaven</i>	<i>Ame no Umi ni</i>
<i>the waves of clouds rise,</i>	<i>Kumo no Namitachi</i>
<i>and I can see</i>	<i>Tsuki no Fune</i>
<i>the moon ship disappearing</i>	<i>Hoshi no Hayashi ni</i>
<i>as it is rowed into the forest of stars</i>	<i>kogikakuru miyu</i>

A native of Nagoya, Japan, **Miyuki Ito** earned degrees from Aichi Prefectural University of Fine Arts and Music (Japan), the Manhattan School of Music, and Columbia University, studying with Naoyuki Terai, Pierre Charvet, Philippe Leroux, and Tristan Murail. She pursued research at IRCAM (Paris) with an artist grant from Agency for Cultural Affairs, Japan. Her works have been performed in the festivals around the world, such as Centre Acanthes 1999/2000 (France), the ISCM World Music Days 2002 (Hong Kong), Résonances 2002 (IRCAM, Paris), ICMC 2004 (Miami), and Spark Festival 2005 (Minneapolis). She had received commissions from Harmonia Opera Company (New York), Tokyo Opera City (Japan), Taketoyo Concert Hall (Japan), Music From Japan (New York). Her recent collaborations include prominent musicians such as Akie Amou, Takashi Harada, Camilla Hoi-tenga, Garth Knox, Tosiya Suzuki, and others. Recent awards include Nagoya Cultural Promotion Agency Prize 2005 (Japan) and Japan Symphony Foundation Prize 2005 (Japan). She has been a fellow at 2005 Djerassi Artist Residency in California with Oshita Fellowship. She currently teaches at the Aichi Prefectural University of Fine Arts and Music, the Nagoya University of Arts in Japan and the Chiba University of Commerce. She and Kumiko Omura are co-founders of NymphéArt, which organizes contemporary music concerts in Japan, inviting well-known musicians from around the world as well as a founder of JUMP (Japan-USA Musical Perspectives). Her marimba solo piece, *Fading Memories* (2000) was recorded on CD AUCD-1 *My Favorite Things* by Mayumi Sekizawa.

Joel CHADABE (USA): *ManyTimes Katerina*, for flute and electronics (15')

Katerina Zenz, flute

ManyTimes ... (the ellipsis is the name of the performer) is for a solo performer playing an acoustic instrument, reciting a text, or singing, and electronics. The performer's sounds are transformed into multiple images that, as layers of timbral transformations or echoes distributed to loudspeakers, extend the performer. The core idea of this composition is that electronic technology extends us beyond what we can otherwise do and what we otherwise are. More, the performers of these compositions are, in effect, playing the electronic system as an instrument; and they are playing it, not by means of a performance device of any kind, but by the characteristics of the sounds they play, such as pitches, successions of pitches, the speed with which pitches change, loudness, varieties of timbre. Yet more, the electronic instrument is an interactive instrument. By 'interactive', in this context, I mean 'mutually influential'. An interactive instrument, defined by software, can seem to think for itself, make its own decisions, and translate its input into an unpredictable output. The performer 'influences' the instrument, as always, but in this case the instrument also influences the performer, providing the performer with something to react to as a cue for what to play next. *ManyTimes ...* was first performed at Engine 27, New York City, on March 21, 2001, as part of EMF's Expanded Instruments Festival.

Joel Chadabe, composer, author, is an internationally recognized pioneer in the development of interactive music systems. His music has been performed at Ear to the Earth (New York City), New Mix (Palais de Tokyo, Paris), Expanded Instruments Festival (Engine 27, New York City), Centro Cultural Recoleta (Buenos Aires), Venice Biennale, Wellington Festival (New Zealand), De Isbreker (Amsterdam), New Music America, Inventionen (Berlin), IRCAM (Paris), Ars Electronica (Linz, Austria), Electronic Music Festival (Stockholm), New Music New York, and other venues worldwide; and recorded on EMF Media, Deep Listening, and other labels. He is the author of 'Electric Sound', a history of electronic music. His articles have been published in leading journals. As president of Intelligent Music, he was responsible for the first publications of interactive music software. He has received fellowships and grants from NEA, New York State Council on the Arts, Ford Foundation, Rockefeller Foundation, Fulbright Commission, and other organizations, and he is the recipient of the SEAMUS 2007 Lifetime Achievement Award. Mr. Chadabe is currently Professor Emeritus at State University of New York; Director of the Computer Music Studio at Manhattan School of Music; Visiting Faculty at New York University; and founder and president of Electronic Music Foundation.

Michael ADAMIS (Greece): *Endon (Inward)*, for saxophone and tape (8')

Athanasios Zervas, saxophone

In this most recent work the composer makes use of sound material recorded in 1972 at the exhibit of metallic sculptures by Clearhos Loukopoulos. From the same material, that developed exclusively from sounds produced when rubbing and striking those sculptures, derived then the electronic music piece *Metallic Sculptures* that accompanied the exhibit. In today's version the electronic manipulation of the sound material has been done via the modern applications of computer music technology and also with a different compositional objective: the outcome, although retaining its relation to the original sound impact of its source, projects mainly the inner quality of an intense mental process that develops without consenting to extrovertive blows, giving the form a contemplative character of insight and self-consciousness. The title is a Greek word meaning "inward".

Michael Adamis (b.19.5.1929) developed a contemporary musical idiom founded in the musical culture of the Greek tradition, thus establishing a school of thought. To date he has written more than three hundred pieces for instrumental and vocal ensembles, orchestra, electro-acoustic and multi-media as well as music for the Church, the Theatre and Television. His presence on the musical scene is amply marked by commissions from major cultural organizations internationally, numerous performances and broadcast, awards and honoraries. Besides composition he has engaged himself with Direction and with Research in Byzantine Musicology. He completed in Athens his studies in both Western and Byzantine music, also graduated in Theology from the University of Athens, and continued with advanced musical studies at Brandeis University in Boston, USA. He has founded and directed major choral groups; he founded the first electronic music studio in Greece, in 1965; in 1971 he published his discovery and transcription of the oldest, so far, sample of two-part Byzantine chant; he was President of the Greek Association for Contemporary Music (1978 - 88) and of the Committee for Choral Development (1981 - 84); as member of the Board of Directors of the Ionian University (1991 - 94) he planned and organized the Department of Musical Studies in Corfu, which nominated him an honorary doctor in 1999. He was also nominated an honorary doctor in 2004 from the Department of Musical Studies in Athens.

Concert 5 (Friday, July 13, 2007, 13:15)

Giancarlo TURACCIO (Italy): *A_notion*, for clarinet and electronics (8' 35')

Giannis Sabrovalakis, clarinet

"A_notion" has been composed in 2006 for the clarinetist Guido Arbonelli, commissioned by Cemat as part of "Progetto Sonora 2006". The composition represents some sort of hymn to life and it constitutes, in extremely transfigured way, almost a chronicle of origins of life: from prenatal life to birth. In fact the work has been composed just in the period in which was born composer's son and consequently the whole composition is based on the theme of birth and life. It follows that the composition expresses a soft and delicate atmosphere and a marked interiority of language that conveys a sense of suspended time; the stitches of time are dilated. Even the title of composition "A_notion" is simply the anagram of Antonio, the name of the baby born during the composition of this work. Also for this reason electronics sounds of tape and some of articulations of clarinet, evoke the concept of procreation and prenatal life. In fact the electroacoustic part, in addition to the sounds derived from clarinet itself, is constructed with elaboration and processing of baby wail, breaths, even of sounds simulating the gestation period. In consequence the idea of Mother like giver of life. This is why the composition begins and concludes with a citation from "Canto di Madre" of M.Lupone. The articulations of clarinet too are flowing and intelligible for to emphasize further the primeval condition and the evocative power of new birth. Moreover in the first and later section of the work acoustic sounds of clarinet and electronics sounds of tape are increasingly fused, until it becomes impossible to distinguish their origin. In fact, these sections are characterized by an amalgamation of the continuous bands of recorded sounds and timbric effects of the instrument. Two sources have become timbrically and dynamically melted into one.

Giancarlo Turaccio was born in Naples in 1967. He studied piano, composition and conducting at the Conservatory of Naples and Milan with B.Mazzotta, N. Castiglioni, G.Taverna and F.Vizioli, then at "Accademia Musicale Pescarese" with Franco Donatoni. Later he attended seminars and masterclasses of Composition with A.Corghi, H.Lachenmann, H.Pousseur, S.Bussotti. Agostino Di Scipio introduced him to electroacoustic music. The attendance at Di Scipio's classes in Electronic Music at Naples Conservatory, constituted an important stage in his development and marked a decisive turning point in his musical thought. His works have been performed on numerous contemporary music events. *Diacronie*, Naples, Galleria Toledo 2001; *Crest*, (France) - Festival International d'art acousmatique Futura '05; Bari (Italy) - *Silence* 2005. *N.I.P.S.* for tape, Salerno (Italy) - *Musiche Inaudite* 2004. *rebil*, for choir, narrator, instruments and electronic sounds - Cosenza (Italy), *Voci dei monumenti* 2004. *De la terre à la lune*, for electronic sounds - *Understanding and Creating Music* - Caserta (Italy) 2005; *Trisi*, for sax, trombone and electronic sounds - Naples, *Venerdì Musicali* 2004; "Sound and music computing" 2005 - University of Salerno (Italy); audio CD CEMAT 2005. *A_notion*, for clarinet and electronic sounds - VI Bienal de Musica Electroacustica 2006, San Paolo (Brazil). *La tradizione invisibile*, for instruments and electronic sounds - Ravello Festival 2006; etc.. *Spin* for two percussionists and tape has been mentioned at "Franco Evangelisti" composition competition 2003 in Rome. In 1999 instead in alliance with Roberto De Simone gives rise to the Dramatic Oratorio "Eleonora", that open the 1999 season of Opera and Ballet of "Teatro San Carlo" of Naples. He has conducted several orchestras and ensemble specialized about contemporary music. He holds the chair of Composition at the Conservatory "G.Martucci" of Salerno (Italy).

Edith ALONSO (Spain): *Transmigración (Transmigration)*, for tape (7' 48)

Changes are the motor of universe. We feel a continuous transformation, physical and spiritual, that never stops. One can go through a state to another without being aware of how we made the passage, but finally, we will find a relation between the first time and the last time. This relationship has a meaning although it has an irrational component. The communication between the different moments allow us to consider that there is a global unity (never finished) that make us feel in harmony and in the same time in trouble.

Edith Alonso is a spanish composer who has studied classical music at the conservatory (graduated as professor of piano and music theory). She started acousmatic music at the GRM's workshop in Paris and from that moment she dedicated herself in the electroacoustic world attending some compositions courses (ENMD d'Evry, workshop at the Ircam, etc). She received a grant of the French Ministry of Research to continue her Ph D studies at the University of Paris VIII and at the Complutense University of Madrid, her natal city. Her activity domain is very large: she composes electroacoustic pieces, mixed works, for support, films, and instrumental music; at the same time she plays improvisation music. Her music has been played in festivals and concerts in France and in Spain.

Stelios GIANNOULAKIS (Greece): *A Beautiful Dream*, for audiovisual (8' 10)

Jung Chul Hur; video

Stelios Giannoulakis

A memory of love comes through caleidoscopic images and developing sound textures. Bliss. Her image is revealed dancing to sacred Thai music. Soon after she vanishes...

Degree in Electronic and Biomedical Engineering at the National Technical University of Athens. Master of Arts in Digital Music Technology at the University of Keele with Mike Vaughan and Rajmil Fishman. Ph.D. in Electroacoustic Composition at the University of Wales Bangor with Andrew Lewis. Composition with recorded and synthesized sound, real time sound diffusion, tools for creative sonic manipulation, improvisation, pop culture, instrument construction. Music for concert, theatre, video, dance, installations and video games. Teaches Creative Music Tecnology at Omiros Music Tecnology and Aegen College in Athens, Editor for Music Pro periodical. Projects include: Macbeth, Protoporia Group, Athens (2006); Urban Fractals (2006) - Open 24/7 (2005) dance productions, 14th Day, Athens; Direct Connection - 2nd Floor - mo- zap - imp ensemble projects; The Making of Balkan Wars: The Game, Personal Cinema (2003); Can You Hear Me, Futuresonic (2006). Studio Césaré 'Lieu de passage', France 2002; BBC Platform 2000; Bangor New Music Festival. Awards: CEC Jeu de Temp (2003); Society for Promotion of New Music (2001, 2002); Bourges International Electroacoustic Competition (1999, 2001).

Jung-Chul HUR

Jung-Chul HUR is a video artist, graphic designer, illustrator and book artist born in Masan, Korea in 1972. He did his first degree in Industrial Design at the Konkuk University in Korea and an MA in Visual Communication at the Kent Institute of Art & Design in UK between 1999 and 2000. His video works have been shown at international festivals including the "Medi@terra 2001 International Art and Technology Festival" in Greece, "Videolisboa 2001" in Lisbon, Portugal, "The 13th

Macao Arts Festival" 2002 in Macao, the "Bangor New Music Festival" in Wales, "The IV International Digital Art Exhibit and Colloquium" in Habana, Cuba and an on-line exhibition for the "MACHFELD International Arts and Cultural Society" in Austria. Vauxhall St. Peter's Heritage Centre in London organised "Vauxhall Open 2002" which also shown his video 'ELEMENT 1. Semantic Illusion & Reality' and also several his videos are shown at the "SlightlyShady" the short film/ video maker's open screening in London. He currently works and lives in London and Hong Kong.

David LITKE (Canada): *From that which could, for soprano, glove and electronics (7')*

Rebecca Simpson-Litke, soprano

David Litke, glove

David Litke's piece "from that which could" makes use of his 3D glove-controlled Spectral Instrument, designed using Max/MSP. This instrument allows the user to sample sound from a live performer; then deconstruct and manipulate its spectral components. "from that which could" explores the symbolic connections between the deconstruction and re-construction of a spectrum with an identifiable source, and similar processes in language. Just as timbres of the voice and instrument sounds are synthesized by combining a collection of spectral components, the text of "from that which could" progressively assembles disconnected phonemes and into recognizable words. The text used as source material for the piece reads as follows:

pulling from the surface
that which could
overpower
and
smother

forcing hand
from
paper
so the marks
would not be
formed

into
words

(text by David Litke)

Originally from St. Catharines, Ontario, **David Litke** (b. 1977) completed his undergraduate studies in composition at the University of Toronto before pursuing graduate degrees at the University of British Columbia. He is currently engaged in doctoral studies under the guidance of Dr. Keith Hamel, and is exploring the techniques of spectral music in his research. In 2005 he was selected by the Ensemble Contemporain de Montréal to participate in their "Génération 2006" project, during which he and three other young composers developed pieces for the ensemble; the project culminated in a nationwide tour with the ensemble, which took place in October 2006. He has been the recipient of numerous awards and fellowships from both U of T and UBC, and his "Piece for Flute and Voice" was awarded first prize in the Pierre Mercure division of SOCAN' s

Young Composer Competition (2003). In addition to composition, he is involved in research projects at UBC that focus on interactions between live performers and electronics, as well as computer-assisted composition using the graphical programming language OpenMusic.

Mehmet CAN ÖZER (Turkey): *Clarinet Concerto, for clarinet, tape and live electronics (12')*

Giannis Samprovalakis, clarinet

This piece has composed for clarinet, live electronics (patch written by me for Max/Msp) and tape (it refers to prerecorded electroacoustic music). In the electroacoustic field, for natural reasons, music is frozen. Composer decides and realizes his/ her ideas with a great precision and every interpretation of that tape piece will be same with the one before, or after. In live electronics field, music depends on the patch or hardware which manipulates sound source in real time. To me, personally, most of live electronics pieces sound technological fetishism more than music. When a piece performed, composers only interest in the "patch" or the machine which control sound. Generally speaking, music lost its significance. The technology we use controls us and it goes directly to technologic fetishism. Among those ideas, my aim was to create a sound environment which may vary from interpreters' perception and creativity, not only playing written notes. With that, it keeps its freshness also doesn't deform the structure inside. Like the "concertos" when composed also to guide improvisation.

Mehmet Can Özer was born in 1981. Self taught, he started music at the age of nine. In 1998, he was accepted to Bilkent University FMPA Composition Division with a full scholarship. He has trained as a composer and orchestral conductor. During those years, he was interested in electroacoustic music and produced many works. After his graduation he was accepted to Conservatoire de Genève and Zurich HMT. In 1998 he won Halici-Midi, 2003 Bourges Electroacoustic Music Competition and in 2006, he was honoured with the Goethe Institute Artists Award. His compositions are performed throughout the world and he gives regular concerts abroad.

Concert 6 (Friday, July 13, 2007, 20:30)

Juraj KOJS (Slovakia/ USA): *Air, for fujara and electronics* (7' 40)

Juraj Kojs, fujara

Air is a composition scored for physical and virtual *fujaras*. The composition presents a communication between the ancient bass pipe instrument and its digitally modeled replica. The virtual *fujara* designed by Stefania Serafin extends the frequency range, amplitude envelope contour and duration, and timbre of the physical instrument. The model further facilitates circular breathing, an effect that is impossible to achieve by the physical *fujara*. The composition elaborates on breathing and overblowing patterns of various durations, shapes, and intensities. Pitch material of 'air' is derived from the Slovak folk music. Formally, the composition follows the trajectory from the idiomatic sound of the physical *fujara* to the sounds produced by extended performance techniques, and, finally, to the sonorities of the physical model.

Juraj Kojs (1976) was born and raised in Slovakia. He is a composer, pianist, and educator. He has studied composition with Beth Wiemann, Kristine Burns, Orlando Jacinto Garcia, Fredrick Kaufman, Matthew Burtner, and Judith Shatin. His studies in piano began in Slovakia and continued in the US with Alena Komorasova, Peter Cerman, Baycka Voronietsky, Phillip Silver, Kemal Gekic, and Jose Lopez. Mr. Kojs is currently a Ph.D. candidate in Composition and Music Technologies at the University of Virginia. His dissertation advisor is Judith Shatin. Kojs' compositions were recently featured at the International Computer Music Conference 2006 (New Orleans, USA), Sonoimagines 2006 (Buenos Aires, Argentina), New Interfaces for Musical Expression Conference 2006 (Paris, France), Gaudeamus International Music Week 2005 (Amsterdam, The Netherlands), and Society of Composers Inc. National Conference 2005 (Greensboro, USA). In 2006, Kojs' composition *Revelations* was awarded the first place prize at Eastman Electroacoustic Composition and Performance Competition. Additionally, his piece *In Secret* received an honorable mention at the Digital Art Award in Tokyo, Japan. Interest in discovering new acoustic worlds and involving technology in composition processes is reflected in Kojs' music. Juraj Kojs is a member of MIAMI: Medialogy Interactive Acoustics and Multimodal Interfaces group that specializes in interactive audiovisual performance and research. In the winter 2006, MIAMI performed and gave a talk at Sonic Arts Research Center in Belfast, Northern Ireland. University of Virginia awarded Juraj Kojs a Dissertation Year Fellowship for the academic year 2006—2007 and the Award for Excellence 2007 in Scholarship in the Humanities & Social Sciences. The funding has enabled him to advance in working on his dissertation, which discusses how virtual instruments by means of physical modeling synthesis facilitate a continuum between physical and virtual realities in music. While at the University of Maine, Florida International University, and University of Virginia, Kojs has assisted with teaching and taught a number of undergraduate courses. Additionally, as a visiting lecturer in interactive performance and computer sound related classes, Kojs joined the faculty of Medialogy Department at Aalborg University in Copenhagen, Denmark during the academic year 2004—2005.

Curtis ROADS (USA) and Brian O'REILLY (USA/Germany): *Point Line Cloud*, sound and moving images (selection)

1. *Half-life, part I: Sonal atoms* (03:34)
2. *Volt air, part II* (02:35)
3. *Sculptor* (03:13)
4. *Volt air, part III* (02:15)
5. *Nanomorphosis* (03:16)

POINT LINE CLOUD is a collection of electronic music pieces completed over the period 1999 to 2003. These works are the result of intense encounters with sound. They were all composed with similar tools and share a common methodology: electronic synthesis of sound particles, combined with granulation processes that scatter the particles into streams and clouds. I then edited the morphology of these materials in detail on multiple time scales, down to the level of individual particles. The macroform of these pieces took shape through a process of multiscale planning. This involved a continual alternation in focus between low-level sound material and the higher-level musical structures that they suggested.

This recording is the fruit of a long period of activity, beginning with experiments in the digital synthesis of sound grains in 1974. These experiments were based on the acoustical theories of the physicist Dennis Gabor and the composer Iannis Xenakis. Their theories proposed a radical perspective on the essential nature of sound: as a flow of sound particles. Thirty years later, this view is more pertinent than ever. We are currently in the midst of a wave of scientific and musical research in particle-based sound synthesis, analysis, and transformation. This in turn has led to the development of a broad range of musical tools, which have opened up vast territories for musical experimentation and exploration.

Half-life (1998-1999) Beneath the level of the note lies the realm of microsound, of sound particles. Each particle is a pinpoint of sound. Like the quantum world of the quarks, leptons, hadrons, gluons, and bosons, the microsonic domain remained invisible for centuries. Recent advances let us probe and manipulate the microacoustical world. Sound particles dissolve the rigid bricks of musical composition—the notes and their intervals—into more fluid and supple materials. The sensations of point, pulse (series of points), line (tone), and surface (texture) emerge as the density of particles increases. Sparse emissions produce rhythmic figures. By lining up the particles in rapid succession, one can induce an illusion of tone continuity or pitch. As the particles meander, they flow into streams and rivulets. Dense agglomerations of particles form clouds of sound whose shapes evolve over time. *Half-life*, composed in 1998 and 1999, explores the birth, replication, mutation, and decay of sound particles. The composition is the fruit of a long period of study and experimentation with microsound. The work is divided into two sections: *Sonal atoms* and *Granules*. The first version was premiered in May 1998 in the large hall of the Australian National Academy of Music, Melbourne, with sound projection over 28 loudspeakers. *Half-life* is dedicated in memoriam to my friend, the composer Ivan Tcherepnin.

Volt air (2003) In this age of fundamentalist religious fervor, it seemed appropriate to evoke the wry, level-headed spirit of Voltaire in the title of this electronic work. The sound material of *Volt air* derives from granular synthesis experiments I made in 1996. Over a period of years, I transformed and edited this material in detail on multiple time scales, especially on the microsonic time scale. For example, I sculpted the original sinusoidal grains (all of which had a common Gaussian enve-

lope) into thousands of uniquely shaped and filtered sound particles. Through various processes of transformation the material separated into four distinct parts, each with a unique logic and macro-structure. The final piece is the result of countless manual gestures applied like brush strokes to the canvas of time.

Sculptor (2001) The source material of *Sculptor* was a monaural percussion track by the group Tortoise, sent to me for processing in August 2000 by John McEntire. I decomposed and filtered the material by means of my constant-Q granulator program, which disintegrated the beating drums into a torrent of sound particles scattered across the stereo field. Beginning with this turbulent sound mass, I articulated the internal morphologies and implied causalities within the current of particles. This meant shaping the river of particle densities, squeezing and stretching the amplitudes of individual particles and particle clouds, carving connected and disconnected frequency zones, and twisting the spatial flow. Over months of intermittent editing on different time scales, I was able to sculpt this material into its final form. The composition was completed in July 2001 in Santa Barbara.

Nanomorphosis (2003) *Nothing keeps its own form, and Nature, the renewer of things, refreshes one shape from another. Believe me, nothing dies in the universe as a whole, but it varies and changes its aspect, and what we call 'being born' is a beginning to be, of something other, than what was before, and 'dying' is, likewise, ending a former state. - Ovid*

Nanomorphosis explores the changes of state in a stream of sound particles. This stream is in evanescence, always renewing itself. By manipulation of various sound synthesis processes, I was able to make the particles sound at times like a scattering of hard pellets, a flowing or bubbling liquid, or an evaporating cloud of steam. I would sometimes mark transitions by inserting a barrier particle (a kind of punctuation mark) into the flow. At transition points one can hear particles ricochet off a barrier, while at the same time the ongoing stream changes character. This ricochet technique, which is nothing more than the damped replication of a particle, appears throughout *Nanomorphosis*. Another characteristic of the piece is the emergence of drones and melodic fragments, the artefacts of resonant filtering. The composition ends in a submerged state. *Nanomorphosis* was premiered over a 24-channel sound projection system at the Paris Planetarium in November 2003.

Curtis Roads is Professor of Media Arts + Technology at the University of California, Santa Barbara, where he holds a joint appointment in Music. He teaches electronic music techniques and composition. He studied at California Institute of the Arts, the University of California, San Diego (BA Summa Cum Laude) and the University of Paris VIII (PhD). From 1980 to 1986 he worked as a researcher in computer music at MIT. He taught at the University of Naples "Federico II," Harvard University, Oberlin Conservatory, Les Ateliers UPIC/CCMIX (Paris), and the University of Paris VIII. Many of his compositions feature granular and pulsar synthesis, methods he developed for synthesizing sound from acoustical particles. He served as Editor and Associate Editor of *Computer Music Journal* (The MIT Press) 1978-2000. His synthesis programs *Cloud Generator* (developed with John Alexander) and *PulsarGenerator* (developed with Alberto de Campo) are widely distributed. Recent books include the textbook *The Computer Music Tutorial* (1996, The MIT Press), which has been translated into French (published by Dunod Éditions) and Japanese (published by Tokyo Denki University Press). Previous books include *Foundations of Computer Music* (1985, The MIT Press), *Composers and the Computer* (A-R Editions, 1985), *The Music Machine* (1988, The MIT Press) and *Musical Signal Processing* (coeditor, 1997, Swets and Zeitlinger). His book, *Microsound* (2002, The MIT Press), explores the aesthetics and techniques of composition with acoustic parti-

cles. POINT LINE CLOUD received the award of distinction at Prix Ars Electronica 2002 and has been performed at many venues around the world.

Brian O'Reilly is the creator of various works for sound, moving images, mixed media assemblage/installation, and is a double bassist, focusing on the integration of electronics and extended playing techniques. He attended the School of the Art Institute of Chicago on a merit scholarship for sculpture where he received a BFA in 1997. Following that he moved to Paris, France to study the composition techniques of the Greek composer and architect Iannis Xenakis, during this time he worked extensively with Xenakis' electronic music system utilizing graphic sonic synthesis the UPIC. After a year of research at Xenakis' studio, what was then called Les Ateliers UPIC (now CCMIX), he received an appointment to become the studio's Musical Assistant, during that time he assisted, amongst others, Luc Ferrari on his audio and video installation "Cycle Des Souvenirs", and Eliane Radigue on her electroacoustic work "L'Île Re-sonante". He completed his graduate degree from MAT (Media Arts and Technology) at the University of California, Santa Barbara. Current projects include "Spectral Viola" a commission from ZKM, to create a series of fixed works for moving images, and live performances collaborating with the Viola player Garth Knox, and to note the video installation "scan processor studies" and three screen "grazing" done in collaboration with Woody Vasulka, both of which premiered as a part of the ZKM's MINDFRAMES show this year. Also currently within preparation is an audio collaboration for double bass and electronics with Zbigniew Karkowski "the difficulty of Being", and the DVD "arboreal index" utilizing the untapped potentials of the DVD specification, the project's objectives are to trace the tangled threads of a fractured narrative, and to interconnect the thin strands that bind sound to moving images. The final output will implement the ability to select from different regions of material both manually, and through involuntary progression by random scripting within the DVD. Thereby constructing a navigable database, in which the viewer will have multiple routes to explore the boundaries of the work.

Theodoros LOTIS (Greece): *Arioso Dolente/Beethoven op. 110, for tape (7')*

Arioso Dolente is based on Beethoven's piano sonata op. 110, and more specifically on the third movement *Adagio ma non troppo*. The *Arioso dolente*, which carries out the main melodic themes, is the epicentre of the third movement. Although I have largely maintained the harmonic structure and even the melodic profiles of the movement, the electroacoustic piece remains a comment on the original piano sonata rather than an analytical approach to Beethoven's music. I was more interested in the spiritual aspects of this sonata. Beethoven had just rebounded from a period of illness. His recovery sparked his creative forces resulting in the genesis of op. 110. Both the joy and the melancholy of life are merged in this movement as an omnipresent duality. While composing my musical comment on Beethoven's *Adagio* I tried to enhance this duality by means of spectral transparency and luminosity which often contrasts and converses with textural obscurity and opacity. The main melodic theme of the original *Arioso dolente* appears in the middle of the piece, remote, magnified and utterly stretched in time. *Arioso Dolente/Beethoven op. 110* was commissioned by Amici della Musica di Gagliari for the festival "Beethoven 2002" in Italy. It was composed at the studio of City University in London and my personal studio and has been awarded the first prize at the *Jeu de Temps/Time Play Competition 2002* (U.K.). My warmest thanks to Maria Metaxaki for the piano recordings.

Theodoros Lotis studied guitar, flute, music analysis and composition in Greece, Belgium and England. His music has been performed at festivals and conferences in Europe, Australia, America and

Asia, and has received a number of awards and distinctions at Bourges 2000 in France, Sculpted Sound Composers Competition 2000 in UK, Metamorphoses 2000 and 2002 in Belgium, Luigi Russolo 2000 and 2002 in Italy, CIMSP 2001 in Brasil and Jeu de Temps 2002 in Canada . He was awarded the first prize at the Concours International de Spatialisation pour l'Interprétation des Oeuvres Acousmatiques, Espace du Son 2002, in Brussels, sponsored by the Fonds Européen des Sociétés d'Auteurs pour la Musique. He has done commissioned work for Musiques et Recherches (1997 and 2000), Sculpted Sound Composers Competition (2000), and Amici della Musica di Cagliari (2001) in Italy. Having produced several instrumental works and collaborated with artists from various disciplines (dance, theatre, video) his current endeavours in music are focused on spectrum, timbre, sonic space and light. He has completed a PhD in Music at the City University, London thanks to grants from the British Academy (Arts and Humanities Research Board), and the Foundation A.S. Onassis. Theodoros Lotis has been teaching electronic composition at Goldsmiths College, University of London (2001-2003), the Technological and Educational Institute of Crete (2003-2004) and the Aristotle University of Thessaloniki (2004-2005), Greece. He is currently lecturing at the Ionian University of Corfu, Greece. He is founding member of the Hellenic Electroacoustic Music Association.

Cort LIPPE (USA): *Music 4 Piano + Computer, for piano and computer (15')*

Ernis Theodorakis, piano

Music for Piano and Computer (1996) was commissioned by the Japanese pianist Yoshiko Shibuya and premiered by her in Tokyo in October of 1996. The electronic part was created at the Hiller Computer Music Studios of the University at Buffalo, New York using the IRCAM Signal Processing Workstation, (a real-time digital signal processor), and the program Max which was developed by Miller Puckette and whose technical support helped make this piece possible. Technically, the computer tracks parameters of the piano, such as pitch, amplitude, spectrum, density, rests, articulation, tempi, etc., and uses this information to trigger specific electronic events, and to continuously control all the computer sound output by directly controlling the digital synthesis algorithms. Thus, the performer is expected to "interact" with the computer triggering and continuously shaping all of the computer output. Some of the sounds in the electronic part come directly from the composed piano part, so that certain aspects of the musical and sound material for the instrumental and electronic parts are one and the same. Sound material other than the piano is also manipulated in the time domain via time-stretching and granular sampling. Frequency domain FFT-based cross-synthesis and analysis/resynthesis using an oscillator bank, as well as more standard signal processing such as harmonizing, frequency shifting, phasing, spatialization, etc. are all employed. The instrument/machine relationship moves constantly on a continuum between the poles of an "extended" solo and a duo. Musically, the computer part is, at times, not separate from the piano part, but serves rather to "amplify" the piano in many dimensions and directions; while at the other extreme of the continuum, the computer part has its own independent "voice". This piece has five sections, and is dedicated to my son Dimitrios, who kindly waited until the piece was completed to be born...

Cort Lippe: Studies: Larry Austin, USA; G.M. Koenig, P. Berg, Institute of Sonology, Netherlands; I. Xenakis, CEMAMu, University of Paris. Employment: 1983-86 CEMAMu, gave workshops, beta-tested UPIC system. 1986-94, IRCAM, developed real-time applications, gave courses on new technology in composition. Since 1994, associate professor, composition, and director, Hiller Computer Music Studios, University at Buffalo, New York. Seminars: Boulez, Donatoni, K. Huber, Messi-

aeon, Penderecki, Stockhausen, etc. Prizes: (1st prizes) Irino Prize, Japan; Bourges Prize, France; El Callejon Del Ruido Algorithmic Music Competition, Mexico; USA League-ISCM Competition, Leonie Rothschild Prize, USA; (2nd prize) Music Today Prize, Japan, (3rd prize) Newcomp Electronic Music Competition, USA, (honorable mentions) Prix Ars Electronica 1993, 1995, Austria; Kennedy Center Friedheim Awards, USA; Sonavera International Tape Music Competition, USA; Luigi Rus-solo Competition, Italy. Performances: International Computer Music Conference, ISCM World Music Days, Gaudeamus, Tokyo Music Today, Bourges, Huddersfield, Sonorities, etc. Recordings: ADDA, ALM, Apollon, Big Orbit, CBS-Sony, Centaur, Classico, EMF, Hungaroton Classic, Harmonia Mundi, ICMC2000, ICMC2003, IKG Editions, MIT Press, Neuma and SEAMUS, Sirr.

Georgia SPYROPOULOS (Greece/France): *Saksti*, for tenor saxophone and live electronics (6' 45)

Athanasios Zervas, saxophone

For *Saksti* [sax+t(enor)], my idea was that time could be considered as a flow of sound events of different nature (duration, pitch, amplitude, timbre, density). Therefore, I thought that we could 'filter' (brightening or darkening) some of these events, in different time proportions, without nevertheless letting this kind of organization turn into a totalitarian structure. This procedure, valid also for the real time sound processing, was calculated by the means of the musical computing.

The sounds used for 'Saksti' are mainly sounds of different saxophones, vocal sounds (blows, fragments of speaking-whispering voice) as well as combined sounds (played and sung simultaneously). An algorithm for sampling was implemented on the final concert patch so as to be used in real time where necessary. The data, in form of lists, is able to generate from the live sound monophonic lines and polyphonic structures giving the possibility to the composer to choose and define parameters such as: sample duration, starting-ending time of sample reading, pitch/speed, amplitude, samples superimposition or not. *Saksti* has been composed during the annual cursus of IRCAM and is dedicated to Vincent David.

Georgia Spyropoulos (Greece, 1965) studied piano, harmony, counterpoint and fugue in Athens. At the same time she studied jazz piano and worked as instrumentalist and arranger of hellenic traditional music (CD LYRA UCDD0009, Athens 1997). Since 1996 she lives in Paris where studied composition, electro-acoustic and computer music with Philippe Leroux (Conservatoire Eric Satie), Form Analysis with Michael Levinas (Conservatoire National Supérieur de Paris, CNSMDP), and composition with Jacques Charpentier (Conservatoire National de Paris, CNR). She also worked with George Crumb and Günter Kahowez in France, Austria and Greece. In 2000-01 she was one of the 10 selected composers (among 400) to participate to the IRCAM's Composition and Musical Computing Annual Course and works with Tristan Murail, Jonathan Harvey, Brian Ferneyhough, Marco Stroppa, Philippe Hurel and Ivan Fedele. She received commissions from IRCAM-Centre Pompidou, the Ensemble Intercontemporain, the French Ministry of Culture, the Ministry of Culture of Baden-Württemberg & GegenWelten Festival of Heidelberg, the Radio France, the Sacem, the "Itineraire" ensemble, the 2E2M ensemble, the "Nikos Skalkotas" Orchestra, the "Accentus" choir, "Le Jeune Choeur de Paris" choir, the "Habanera" saxophone quartet, the "Cries de Paris" vocal ensemble, the "Diffraction" ensemble, the saxophone player Claude Delangle and the cembalist Elisabeth Chojnacka. Her works have been performed in France, USA, Germany, Austria, Japan and Greece. Georgia Spiropoulos is the winner of the VILLA MEDICIS Hors-les-Murs Award 2002 of the AFAA & the French Ministry of Foreign Affairs. She worked as a composer-in-residence in the USA (New York, Boston & Cambridge, 2004) on interactive inter-

faces for conductor's gesture capture. She also received the PROJECT ROOM grant from the Meet-the-Composer program in New York. In 2004 was participated at the IRCAM reading panel 2004 for the Composition & Computer Music Programs.

Currently she is working on a composition for contralto, ensemble and live electronics commissioned by the French Ministry of Culture for the 2E2M ensemble & the Muse En Circuit, music for a Puppet, a computer music composition for the Danse Macabre II Peepshow puppet installation by Allen Weiss and puppets made by the art brut artist Michel Nedjar; Charisma X, as sound designer & musical supervisor of a documentary film on Iannis Xenakis with film director Efi Xirou.

Simon EMMERSON (UK): *Spirit of '76*, for flute and accelerating delay (13')

Katerina Zenz, flute

Spirit of '76 was written in the US Bicentennial year for the American flute player Kathryn Lukas who gave the first performance with the composer at the Institute of Contemporary Arts, London on the 3rd of October 1976. Nancy Ruffer performed the work many times between 1978-1983. The flute sounds are multiplied on a stereo delay system with feedback to build up polyphonic layers. But playback is slightly faster than record, thus the sounds are transposed upwards (3/4 of a tone) on each repeat, becoming correspondingly shorter and faster. The delay time itself decreases progressively from 64 seconds to 4 seconds. Everything about the piece reflects this one steady rising process. The original analogue live electronics involved two tape machines, the left hand one on record, the right on playback (varispeeded up 3/4 of a tone). A loop of tape went out across the floor between the machines and was progressively reduced in length until it became taught at which point the piece abruptly ended. A MAX/MSP patch now fulfills the same function though without the 'theatre of technology'. Simon Emmerson 1976/2004.

Simon Emmerson is Professor of Music, Technology and Innovation at De Montfort University, Leicester. He works mostly with live electronics include works for Jane Chapman (harpsichord), the Smith Quartet, Inok Paek (kayagum), Philip Sheppard (electric cello), Philip Mead (piano) with the Royal Northern College of Music Brass Quintet. Also purely electroacoustic commissions from the IMEB (Bourges) and the GRM (Paris). His works have been issued on Continuum, *Le Chant du Monde*, Emanem, Isidorart and Sargasso and he has contributed to and edited *The Language of Electroacoustic Music* (Macmillan, 1986) and *Music, Electronic Media and Culture* (Ashgate, 2000). He is preparing a new book, *Living Electronic Music*, for Ashgate (2007) as well as a second solo CD for Sargasso. He was founder Secretary of EMAS (now Sonic Arts Network) in 1979, served on the Board until 2004 and was invited to become an Honorary Member in 2005.

Installations

Sylvie BENOIT (France): *Ulysse and his sirens...*

The story of the sirens in Homers *Odyseia* tells us about dangerously charming voices and words that are supposed to give us knowledge and wisdom. In this installation, this voices are figured by a series of political discourses by contemporary sirens using the artifice of demagoguery, cult of personality, political delirium and the like. However, in the siren's apparatus, there is something, deeper than the fine rhetorics, which is embodied in the grain of the voice itself, in the sonic structure of the words, that maybe touch us at a subliminal level. This aspect is figured by a supplementary voice, generated in real time by the Program OMax, which literally threads a new voice by picking up elements in the other ones and articulating these elements on behalf of musical principles. This other voice is the eternal voice of the siren, a diffraction of all languages, an echolalia that bears the appearance of language and meaning, but in reality carries just the vacuity of death. Echolalies are known to be produced by people in trance state, and are supposed to express a buried knowledge, or even to come close to what the Pythia could produce, as we try to imagine it.

An actress who also studied theater administration, **Sylvie Benoit** created the association Benoit & Co. She then moved on to directing theater and writing in journalism classes, for performances of fairy tales, as well as for a radio program (*la politique de mon humour*), involvement in the writing commandos, and above all, writing of songs and sound poems. For the theater, Sylvie Benoit has written a dozen plays, five of which have been performed, or paintings and sculptures associated with a certain theatrical language for different theaters. For street theater and happenings, always upon the request of neighborhood parties or festivals, Sylvie Benoit enjoys bringing together old writings and today's audience, mixing them with contemporary texts written especially for the occasion.

Anastasia GEORGAKI and Anargyros DENIOSOS: *The Folklore Festival of Lefkas*

Assistants: Ntana Papachristou Maria Louiza Polymeropoulou

The Folklore festival of Lefkas is one of the most important cultural events that enrich with artistic experiences the Summer period of the island since 1963. With forty musical ensembles emerging from forty different countries, the festival has created a multicultural environment and has contributed within the context of fraternity and communication in order to create an educational and interactive cultural occurrence. The sound installation focuses on the evolution of this artistic event. It unravels the veil of the cultural "other" and demystifies the celebratory historic five decades of Lefkas. It concentrates on the celebration of the opening day; its form reflects a spiral, where each cell consists of cultural elements drawn from the sound and images of the festive event. Its slow unfolding reflects the course of time with the use and re-use of materials. It also attempts to represent the interaction between cultures.

Many thanks to Mr. Yannis Falkonis for his kind offer of the visual material without which this installation would not be possible.

Marinos GIANNOUKAKIS, Iannis ZANNOS, Taxiarchis DIAMANTOPOULOS, Panos TSANGARAKIS, and Brian O'REILLY (USA/Germany): *Self-Space / Odysseus in Lefkada*

Self-space is a platform designed for experimental music and multimedia performance. It makes use of swarm theory, a sub-field of complexity theory to model the complex behavioral structures of intelligent interactive environments. It combines design approaches from diverse fields such as music, architecture and robotics, to provide combined stimuli to the visitor and create three-dimensional sonic entities. It is based on a robotic structure, that moves as a whole and engages the visitor in interaction. The present realization includes 6 moving and 4 fixed loudspeakers, digitally controlled lighting video projections. The installation stimulates perceptual processes through exploration of a constantly changing space, thereby evoking a sense of internal "journey", allowing the user to redefine the notion of "Self" through human-machine interaction. The installation was created by combining contributions by the participants as follows: Giannoukakis: Robotic framework and genetic algorithms for swarm interactive behavior; Zannos: SuperCollider framework and processing of recorded sounds of swallows from Corfu during summers of 2006-2007. Diamantopoulos: Sensor technology and processing of images via VVVV. Tsangarakis: Camera tracking and video processing. O'Reilly: Editing and live processing of images with Imagine. All parts of the installation communicate with each other via OSC. The images were recorded in Lefkada in the spring of 2007 by Nikos Grigoriou, Nikos Moustakas and Alexandros Soumelidis, students at the Department of Audiovisual Arts of the Ionian University.

Historian and geographer Émile Mireaux and archaeologist Wilhelm Dörpfeld, excavator of Tiryns and successor of Schliemann in Troy have argued that Lefkada was the actual Ithaca at the time of Homer's *Odyssey*. Lefkada, whose southernmost point was known in mediaeval times called "Finis Terrae" (End of the Earth), is the southern endpoint in a geographic line that passes from Nekromanteion, the lake of Acheron and Acherousia and ends at the Divination Temple of Dodoni. These places are intimately linked with the journey "The Other World" since prehistoric times. Inspired by these facts but above all by the landscape and light of Lefkada, this team decided to compose a soundscape evocative of Ulysses' transcendental journey. We used abstract and sampled sounds and images, including recordings of swallows made in Corfu and photographs as well as videos of Lefkada's skies, sea and land, to evoke the sense of discovery or re-composition of self through the journey in a constantly vacillating space.

Marinos Giannoukakis (born in 1979) has studied electronics in Manchester and followed the Master course in Electroacoustic composition in Keele University. He is currently completing his Masters degree in "Sound Arts and Technologies" in the Music Department at Ionian University under the guidance of Iannis Zannos, taking interest in sound composition and intelligent environments implementing the extensive use of electronics and robotics for sound spatialization.

Taxiarchis Diamantopoulos works for the Music Technology & Acoustics dept. at the T.E.I. of Crete, as well as the Fine Arts School of Athens. He has been experimenting with real-time multi-channel audio environments for the past years. Decision-making sound synthesis algorithms are mainly implemented with SuperCollider. Recent research work includes the development of a distributed interactive communication environment for live music performance (diamouses project).

Iannis Zannos has a background in music composition, ethnomusicology and interactive performance. He has worked as Director of the Music Technology and Documentation section at the State Institute for Music Research (S.I.M) in Berlin, Germany, and Research Director at the Center for Research for Electronic Art Technology (CREATE) at the University of California, Santa Barbara.

He has taken part at numerous international collaborative Media Arts projects and has realized multimedia performances both alone and in cooperation with other artists. He is teaching audio and interactive media arts at the Department of Audiovisual Arts and at the postgraduate course in Arts and Technologies of Sound of the Music Department at the Ionian University, Corfu.

Brian O'Reilly: See notes of Point Line Cloud at Concert 6.

IEMA (K.Moschos) / UOA: Theodore Stamos, the Color Sculptor

Theodoros Stamos, one of the representative painters of abstract expressionism, has lived for several periods of his life in Lefkada. His father originated from this island and so Theodore himself found his roots here. Eccentric, a paradox and "mainly an artist" for the simple people of Lefkada, he was received with great enthusiasm as well as naivety, as his work was very different from simple naturalistic landscape paintings of the island.

In this sound installation we will attempt to delineate several periods of his itinerary and present some of his famous paintings, combining scans of photos with techniques for conversion of image to sound. The project is divided into two main sections, reflecting the two poles in Stamos' creative work: U.S and Lefkada. The latter was a great source of inspiration to him.

Our design deals with subtle color nuances of his paintings and their correspondence to sound, the representation of nature through abstract models, his relation to Lefkada's nature and his "credo" for art.

In our installation we employ various techniques to play with the real and the imaginary, image and sound, time and its reversibility, "topos" (locus, location) and its energy.

KSYME - Centre of Contemporary Music Research (Greece): Musical Iconographies

An icon (from Greek **εἰκών**, eikon, "image") is an image, picture, or representation. (From Wikipedia, the free encyclopedia)

This is a collection of 12 works of Greek electroacoustic music composers in their collaboration with Greek contemporary visual artists. The resulting video art clips were first premiered at Four-nos Center for Digital Culture in Athens on 11-04-2005.

1. Greece	8' 10	7. Lipsidria	11' 15
Dimitris Kamarotos: Music		Nikos Charizanos: Music - concept	
Manthos Sadorineos: Video		Panagiotis Tsangas: Video	
Vasilis Papavasiliu: Double bass		8. Electronic Quartet	6' 50
2. X pcs	5' 21	Panagiotis Velianitis: Music	
Spiros Faros: Music		9. A Beautiful Dream	8' 10
Makis Faros: Video		Stelios Giannoulakis: Music	
3. Adialiptos	7' 06	Jung Chul Hur: Video	
Petros Frangistas: Music		10. Study for video and strings	8'
Pandora Muriki: Video		Dimitris Karageorgos	
4. Di' esoptru	8' 20	11. Fish - a virtual blue story	
Kostas Madzoros : Music		Studio 19, Vasilis K. Kuduris – Kostas I. Bokos	
Maria Mitzali : Video		12. Jungle	5'
Georgia Tsangaraki : Voice		Music / Concept – Manolis Manusakis, Saxofono –	
5. The diary of detective Trash	7' 26	Theofilos Sotiriadis, Video Art Animation –	
Akis Dautis: Music		Panagiotis Guburos, Ikastiko Iliko - Asterios Las-	
Giannis Kolios, Giorgos Grekas: choreography		karis, Surround Mix–Studio 19 Kostas Bokos.	
Kostas Papapanagiotu: video			
6. Invisible cities	8'		
Andreas Mniestris: Music			
Simona Sarki: Video			

Cécile LE PRADO (France): *The Triangle of Uncertainty (Suite for maritime landscapes)*

Imagine the coast seen from the Ocean. You see places you recognize, far-off and familiar: light-houses, headlands, the age-old landmarks. You also see less significant, more personal sites: a house, a line on a cliff. And you feel that slight twinge that affects all sailors coming back to port after a long voyage. These places invested with memory and recognition are known as seamarks. Now close your eyes and slip into the universe of sound. Imagine you are in the middle of the Ocean, searching for markers, for seamarks of sound. Gradually, three directions take shape; three axes mark out the triangle of Uncertainty. Fastnet, to the North-West; Cabo Finisterre to the South; and, away to the East, Le Conquet - the tip of Brittany. The sounds of the elements - wind, waves, the coast - mingle with those of maritime signalling - lighthouses, bouys, radios - and then those of the ports, the docks, packing cases being shifted, foghorns. And then there are the lighthouses, the seabirds, the fish market, the entire acoustic soul of each place unfolding around you and, for a moment, you know where you are. Michel Thion.

Credits

Sounds recorded in Brittany (Le Conquet, Ouessant), Ireland (Cork, Fastnet) and Spain (La Co-ruña, Cabo Finisterre). Composed and spatialised by Cécile Le Prado

Composed by Cécile Le Prado at the Ircam studios

Scientific advisor (Spat®): Jean-Marc Jot

Musical assistant: Gilbert Nouno

Mixing/mastering assistant: Frédéric Prin

Assistant sound recordists: Mar Pazos Oviedo, Christian Dubet

The sound installation *The Triangle of Uncertainty* was produced by Clameurs. Executive production and distribution: "l'autre rive". Co-produced by the Centre National Dramatique et Choréographique Le Quartz de Brest and the Établissement Public du Parc et de la Grande Halle de la Villette. With the help of the AFAA (Association française d'action artistique - Ministère des Affaires Étrangères) and Audio 33 - Amadeus Concept.

Cécile LE PRADO (France): *Listen Lisboa*

For "Listen Lisboa", see Proceedings of SMC07.

Cécile Le Prado is a music composer. Since 1996 she works as an associated professor in the multimedia department of the CNAM (Conservatoire National des Arts et Métiers). She is a member of the research laboratory CEDRIC and she is in charge of the department "Sound and Music design" specialty in the graduate school of Games and Interactive Media (ENJMIN). Since 1995 she works periodically with IRCAM (Research and Coordination Institute for Acoustic and Music) in the fields of training, production and research in 3D sound. As a composer she works mainly with sounds of environment and composes for sound installations based on spatialization and public immersion. She also acts as composer for cinema and television (fiction and documentary). In 1996 she received the Imagina Price (Music and sound original composition for digital images).

Tom MAYS (USA/France): *Acousmeaucorps*

Acousmeaucorps (pronounced « a-cous-mo-cor ») is an interactive sound installation which creates an acousmatic body space using a video camera, a computer and 4 speakers. The video camera (situated above the space and facing downward) is connected to a computer running Max/MSP/SoftVNS which uses movement and position data to generate spatialized sound. The human body thus becomes a performance instrument, generating and triggering sounds which build musical sequences through walking, running, making arm movements, or even just flexing one's fingers. For the current version of *Acousmeaucorps*, the sounds are played on two levels. One is a resonant « mass » that seems to move like water in a wading pool – favoring different pitches depending on the area of movement. The other is the triggering of different « found objects » that seem to jump out of very specific locations within the space. Both sound types combine to encourage people to move in such a way that they can't help but forget to be self-consciousness and enjoy searching around with movements that become fluid and questioning, the idea of « body » and « space » taking on new significance. The visitors moving freely within this space defined by the four corner speakers become the creators and performers of their own simultaneous music and dance.

Tom Mays: Composer, computer performer and teacher – specialized in computer music. Associate professor of new technologies applied to composition at the Superior National Conservatory of Music in Paris. After earning his B.A. degree in composition and electroacoustics from San José State University in California with Allen Strange, he founded Studio Césaré in Reims with Christian Sebille, realized musical environments for composers at IRCAM as an assistant musical and participated in numerous musical experiences as a composer or performer, his works being commissioned and supported by various studios and organisations such as La Muse en Circuit, Le Cirm, Césaré, La Grande Fabrique, le G.E.P.S (Rennes) and Radio France. He is especially interested in instrumental performance of real-time computer systems for both written and improvised music, as well as in interaction between music and video.

Discovery: When we first experience music we go through a process of discovery. We are taken on an aural journey through an unfamiliar musical landscape, which in this animation is also reflected as a physical landscape. We hear (and see) for the first time those things that captivate us and inspire our curiosity. *Familiarisation:* Listening to this piece of music again begins the process of organising our memory. As we fly through a second time we start to focus on different parts and begin the process of familiarising ourselves with more of the detail in the music. Aspects that weren't obvious the first time become clearer and the relationship between different melodies and sections are established. *Recognition:* Once we are familiar with a work of music we begin to recognise aspects of its structure. We recognise melodies and anticipate their development throughout the work. We are familiar with the musical landscape and recognise the aural landmarks such as the ends of phrases and key changes. The three crystal paths in this animation reflect some of these landmarks and in this last fly through we can recognise from a broader perspective the structures that underpin the different sections of the music. *The music:* The music is a short composition written for three cellos. Each cello is represented as a string which runs along a path. The paths are just like lines of written music. They step up and down with pitch and twist and turn around each other similar to the way melodies do. The paths also divide the different sections in the music. The strings shorten and lengthen with change in pitch similar to how string instruments function. The strings move from side to side, representing the friction of the bow on the string as it changes direction. The spikey detail around the strings is made using a spectrogram of the individual voice, this helps to generate a synchronous acoustic identity. The pitch is also mapped to its own colour. There is an internal colour which maps the current chord and an external colour which maps the current note. This all adds up to three acoustic entities, existing in some isolated corner of a vast digital universe, destined to forever repeat their journey as countless eyes look through a small electronic window into their curious little world.

Alex graduated as a cellist from the Canberra School of Music in 1993. In 1995 he traveled to Europe where he continued to give chamber music concerts and performed with the Vienna based Eurasia Chamber Orchestra as principal cellist. In early 1997 Alex returned to Canberra to explore his interests in music visualisation by completing a graduate diploma in computer animation at the Australian Centre for the Arts and Technology (ACAT), now the Center for New Media Arts (CNMA) at the Australian National University. Alex's graduate work, *filling lost*, was chosen to be screened as part of the digital media section of the 1999 Sydney Film Festival. In 2004 he completed *Discovery, Familiarisation, Recognition (DFR)*, his first independent visualisation exploring the relationship between musical structure and its visual manifestation. Since then he has participated in the 2004 symposium for the Society of International Musicologists (SIMS) in Melbourne where he gave a seminar on the use of music visualisation in the development and education of new classical audiences. In 2005 Alex developed his "Dome Project", a portable dome theatre inside which he screens his digital work. This was initiated as a means to bring his work to the public through touring schools visits and music festivals. The Dome has recently been engaged as the centerpiece for the Australian Science Festival in August 2007. In 2006 Alex also produced a prototype educational interactive CD rom which explains all the detail behind the imagery of *DFR* as well as exploring many other aspects to do with music and acoustics. Alongside the development of his digital work Alex maintains a busy schedule with regular chamber music engagements, performing with the Canberra Symphony Orchestra as well as composing and recording work. He has also been employed on a casual basis at Questacon, the National Science and Technology Center, for the last four years as a gallery explainer, engaging the curiosity of kids of all ages in all things scientific and more.

Demonstrations and Workshops

Demonstrations I (Wednesday, July 11, 2007, 13:00)

Dimitris SARRIS: *“Digital Abacus” and “Manual Computers” in the Classroom: Teaching interdisciplinary Computing Culture and Sound Composition Origins*

“Interdisciplinary Teaching” means that during teaching process disciplines, theories and methodologies from more than one discipline are combined, in order to discover and systematize knowledge. In Greek education interdisciplinary teaching as a methodology was officially established during last years. According to this, teacher turns to a coordinator in a research project in the classroom, and students are researchers and learners at the same time. After that, combination of Music and Computing, during teaching seems to be a very efficient way to research and learn things about contemporary culture, literacy, and technology issues as far as relations between music and computing are very strong. In order to enforce this ability, new educational media, and ideas for representation of knowledge arise. Computers and Music Instruments converge and Composers turns to Sound Programmers. That’s why traditional «abacus» can be transformed to «digital», in order to calculate notes, sounds, pitches and durations... Basic Idea of the presented project (that has been taught in Greek schools and developed in Culture and Technology Laboratory (T.E.I. of Epirus) is to teach through representations of a computer’s memory inside. These representations, constructed from common, daily materials can be used from children as a modern, digital (based on 0 & 1) abacus. Also students can operate simple computing activities on these constructions, by hand. As a result of invented educational activities with the “manual computers” (inspired also from computer science) students can understand key principles of computing and its culture. All this activity focuses on obvious music’s computing origins. Finally, under a totally digital procedure the classroom turns to a «multi-channel sound generator» which provides music very closely to the methods that innovative composers of the twentieth century used. With the cooperation of the Music and Computing lessons from the curriculum, it can be an interdisciplinary way to discover knowledge in the classroom. In this workshop we will examine ways to construct and use «manual» digital computers. We will present key issues from Computing and Music lessons, but also from Technology and Arts too. Participants will have their own simple, manual, personal computer, and other digital media will be used in the “classroom”. Finally they will have the necessary instructions to organize their own creative, educational or cultural activity.

Dimitris Sarris is a Music Teacher in Primary Education, with educational and research work in higher education. He studied Organology (instruments of the lute family and percussion), Music (Higher Studies in Theory, National Conservatory), Communication and Mass Media (direction: Culture, BA, Panteion University of Athens), Business Administration (BA, Technological Educational Institute of Athens), Cultural Policy, Management and Communication (MA, Panteion University of Athens). As a director of Culture and Technology Laboratory, (Department of Traditional and Popular Music, Technological Educational Institute of Epirus) developed projects about Computing Culture and Education, Auditory Culture and Sound Pedagogy, Visual Culture and Aural literacies. He is a PhD candidate (Panteion University of Athens) researching about Music and Sound Pedagogy and Culture.

Demonstrations 2 (Thursday, July 12, 2007, 9:00)

Carlos AGON, Gérard ASSAYAG, Jean BRESSON: OpenMusic Workshop:
Computer-aided composition, sound synthesis and improvisation.

Computer-Aided Composition (CAC) aims at connecting formal computing tools and musical thought, in order to provide the composers with programming languages adapted to their specific needs, and to allow them to formalize, develop, and experiment their musical ideas. OpenMusic is an example of a complete visual programming language dedicated to music composition. It is a graphical interface of the Common Lisp programming language, in which programs related to the creation and manipulation of musical structures are developed graphically according to various programming paradigms (functional programming, constraints programming, object-oriented programming, etc.). Different aspects of music composition and creation will be presented: this workshop is intended as a tutorial of the OpenMusic software, but at the same time our aim is at drawing here our idea of interaction between computer science and music creation.

Part I. General

In the first part of the workshop, some general aspects of the environment will be presented, as well as the fundamental computer-aided composition concepts behind it. One of the main concepts of OpenMusic is that of notation: notation of musical structures (musical scores) as well as notation of the processes leading to these structures (visual programs). Different strategies for mixing and unifying visual programs and music structures are available, and will be described here. Demonstrations will exemplify such strategies and address programming basics and specific abstract data types concerning traditional notation (chords, rhythmic structures, polyphonies, etc.)

Part II. Sound synthesis

The second part will be dedicated to sound synthesis and electroacoustic issues in computer-aided composition. By focusing on compositional modelling, a CAC environment such as OpenMusic might therefore provide new possibilities for a high-level, abstract and musically relevant control of the sound processing tools within the scope of a compositional framework.

Various related features of the environment will be presented: specialized data structures, sound analysis, processing, and synthesis tools, as well as high-level interfaces for developing corresponding compositional processes.

Part III. Improvisation

The third part will be centred on the notions of improvisation with computer and automatic style modelling. OMax, an extension of OpenMusic working with the real-time environment Max/MSP will be presented as well as some recent experiments with performers. OMax handles a model of musical memory and favors the process of "stylistic reinjection" that allows the performer to interact with a synthetic clone that develops progressively more and more skills. If the audio-equipment allows it and willing musicians-improvizers are present, the tutorial could terminate on a collective performance.

Carlos Agon first studied computer science at the Universidad de los Andes, Bogota (Columbia). After his PhD degree in computer science at the University of Paris VI in 1998, he obtains the HDR (Habilitation à Diriger des Recherches) with a thesis on "programming languages for

computer-aided composition" and is then qualified for the position of Professeur. Together with Gerard Assayag, he conceived the OpenMusic visual programming language that, with more than five hundred users, has been used in the composition of many musical works. He is the editor of the "OM Composer's Book" serie (together with Gérard Assayag and Jean Bresson), which presents a panorama of compositional processes analyzed by composers who utilized OpenMusic for the main conception of their pieces.

Gérard Assayag is head of the Music Representation team at IRCAM - CNRS, Paris. He has designed the language OpenMusic with Carlos Agon and Jean Bresson. He has been in charge of the graduate program ATIAM (Acoustics, Signal Processing, informatics applied to Music) till this year. Founding member of AFIM (French Association for Musical Informatics), member of the FWO society on Foundation of Music Research and of the CNRS Network on Music & Cognition. Gerard Assayag is also one of the "OMax Brother", the people behind the design of the Computer Improvisation OMax software.

Jean Bresson studied science at the Université Paul Sabatier (Toulouse, France) and then specialized in computer sciences at the Ecole Supérieure en Sciences Informatiques (Université de Nice - Sophia Antipolis, France) where he received a Master's degree in 2003. He is now researcher and developer at IRCAM (Paris, France) in the Music Representations research team, working principally on computer-aided composition and the OpenMusic software, and studies towards a PhD degree supervised by Carlos Agon at IRCAM / Université Pierre et Marie Curie (Paris 6), about compositional and computer models and representations for sound synthesis and electroacoustic music composition.

Demonstrations 3 (Friday, July 13, 2007, 9:00)

Claude CADOZ: *Sound, music, multisensory and haptic interaction computing with GENESIS - CORDIS-ANIMA*

CORDIS-ANIMA is a complete conceptual system allowing modelling and simulating objects. It allows to describe (to model) in a very intuitive and modular way any physical object (real or imaginary, materially realizable or not) as a network of very simple elements (masses, viscoelastic linear or non-linear interactions, etc.) in very small number of categories (less than 10). The language that allows the modelling is also the one that describes the digital simulation process. So, with CORDIS-ANIMA, we actually model and simulate objects. Although it can perfectly run on small computers, in non real-time, the architecture of CORDIS-ANIMA algorithms system is conceived for optimal multisensory (gestural, haptic, acoustical, visual) real-time calculation. It is at the moment used both on non-real time and on real-time platforms. GENESIS is the software environment allowing musicians and sound designers to create CORDIS-ANIMA models and to compose music with them. It is a graphical interface using in particular the direct manipulation of icons associated to the CORDIS-ANIMA formalism. But it provides also a lot of well-adapted sophisticated functionalities that allow, if wished, to create music without any external post-treatment or sounds assembly protocol, within a unique paradigm. The output of GENESIS is of two related kinds: the model (as complex as we want) itself, and the audio (multichannels) file produced by this model. During ten last years, CORDIS-ANIMA and GENESIS was practised by a lot of musicians, composers, students, and teachers in a large number of places. It was the occasion of creation of a large number of pieces presented and awarded several times in computer music events (ICMC, festival de Bourges, etc.). But it was also the occasion of the accumulation of a great number of experiment and knowledge. Today, GENESIS is accompanied by a large "instrumentarium" that can be shared by all the users and be at the center of a thorough pedagogy. The demonstration will give a direct approach of this. It will be completed by video films showing the link of this work with the specific ones on animated images using CORDIS-ANIMA (through the MIMESIS environment), on haptic interaction (the ERGOS force-feedback technology developed by ACROE-ICA), and the real-time multisensory simulation (TELLURIS platform).

Following his PhD, during which he invented the sound synthesis by physical model and devised the bases of the CORDIS-ANIMA language, **Claude Cadoz** launched with his two colleagues Annie Luciani and Jean-Loup Florens, an ambitious research program on computer arts through physical modelling, multisensory interactive simulation, and instrumental interaction with computer using force-feedback gestural interfaces. The ACROE group is considered as one of the pioneers of the Virtual Reality current. He built, with J. -L. Florens, one of the first force-feedback devices in the world and gets several patents on the following ones. At ACROE, he is more particularly in charge of the computer music research. He developed, with Nicolas Castagné, the GENESIS environment, dedicated to sound synthesis and musical composition with the CORDIS-ANIMA physical modelling approach. He wrote many articles on computer music, man-machine interaction, physical modelling. He wrote a book on Virtual Reality, and he composed several musical pieces using the GENESIS environment. He founded and is responsible of the "Art, Science and Technology" master of the Institut National Polytechnique de Grenoble (INPG).

Claude Cadoz is also member of the board of administrators of the institute IRCAM in Paris since 1983.

Tom MAYS: *Making Music with Camera Tracking*

(See *Installations*)

Andreas DIKTYOPOULOS: *Composing with the UPIC system*

"The UPIC (Unité Polyagogique Informatique de CEMAMu) is a synthesis system conceived by Iannis Xenakis and engineered by researchers at the Centre d'Etudes de Mathématique et Automatique Musicales (CEMAMu) in Paris (Xenakis 1992). The UPIC system combines various synthesis methods with a flexible graphical user interface to create a unique approach to sound composition. An initial version of the UPIC system dates from 1977. In this implementation, interaction was mediated by large, high-resolution graphical tablet. At the level of creating sound microstructure, waveforms and event envelopes could be drawn directly on the table and displayed on a graphics terminal. Alternatively, composers could tap a set of points to be connected by means of interpolation. With a waveform and an envelope defined, their product could be auditioned. At a higher level of organization, composers could draw the frequency/time structure of a score page. As the composer moved a pointing device, lines-called arcs, in UPIC terminology-appeared on the display screen. Individual arcs could be moved, stretched or shrunk, cut, copied, or pasted. Musicians also had the option of recording, editing, and scoring sampled sounds. The sampled signals could be used as either waveforms or as envelopes. When sampled signals are used as envelopes, dense amplitude modulation effects occur. Graphic scores could be orchestrated with a combination synthesis and sampled sounds, if desired. The first version of the UPIC system ran on a slow and bulky minicomputer. Although designing the graphics was an interactive process, the calculation of sound samples from the computer's graphical score involved a delay. A major breakthrough for the UPIC was the development of a real-time version, based on a 64-oscillator synthesis engine (Raczinski and Marino 1988). By 1991 this engine was coupled to a personal computer running the Windows operating system, permitting a sophisticated graphical interface (Marino, Raczinski, and Serra 1990; Raczinski, Marino, and Serra 1991; Marino, Serra, and Raczinski 1992; Pape 1992)." [C.Roads, *The Computer Music Tutorial*] From Iannis Xenakis' *Mycenae Alpha* (first work created with the UPIC system, 1980) until now, many composers have used UPIC with many different ways. In this demonstration are going to be presented works for UPIC and instruments such as Horacio Vaggione's *Champs parallèles* (1998) for tenor saxophone and UPIC, Jean-Claude Risset's *Saxatile* (1992) for soprano saxophone and UPIC, Brigitte Robindoré's *As Strangers and Pilgrims on the Earth* (1994) for 2 percussionists and UPIC and Gérard Pape's *On the Road at Night* (1993) for soprano, flute and UPIC.

Andreas K. Diktyopoulos. Born in Darmstadt, Germany, in 1983 and raised on the small Greek island of Syros. Now resident in Athens, he studies on the undergraduate program of the Computer Science Department of the Technological Educational Institute of Athens. He is continuing his musical studies with Maria Aloupi (theory, composition and piano), Gerard Pape (composition) and Kostis Theos (violoncello). Simultaneously he has taken private electroacoustic music composition lessons with Tim Ward. Since October of 2005 he is a member of HELMCA (Hellenic Electroacoustic Music Composers Association). He is collaborating with the Centre for Music Composition & Performance (CMCP-Athens).

Studio and Institution Reports

Friday, July 13, 2007, 11:30

Joel CHADABE: *Electronic Music Foundation and the Future of Music*

The mission of Electronic Music Foundation (EMF) is to explore the new creative potential in the convergence of music, sound, technology, and science, and foster understanding of its benefits to the public. Addressing both artists and public, we organize concerts, festivals, symposia, and conferences in New York City and elsewhere. We present and commission innovative work, publish CDs and DVDs, support research, develop collaborative projects with partners and contacts worldwide, and maintain websites on the history and current practice of electronic music, thereby providing resources for creativity and encouraging the development and exchange of new ideas throughout the world. Through a powerful internet presence and global outreach, we view ourselves as a center and beacon for the empowerment of individual creativity and access to information and materials that foster understanding of the new roles that music can play in the world. Founded in September 1994, Electronic Music Foundation, Ltd. is a New York State not-for-profit organization with its principal office space in Albany, New York.

Leigh LANDY: *The ElectroAcoustic Resource Site (EARS): status report and a look into its future*

Most SMC participants will be acquainted with the EARS site already (www.ears.dmu.ac.uk). In the autumn, the project will approach 'a fork on the way' where it will pursue not one but two paths. The first is the continuation of what already exists, although it is becoming more global every month. The latter involves a tripartite educational project based on the current EARS site. EARS II will be prepared as part of a holistic curriculum for children. It will include fewer terms than does EARS I, but will be much more interactive employing all available forms of hypermedia. It will be interwoven with our current Intention/Reception methodology that is being used to support access to this body of work by inexperienced listeners. Finally the software called Sound Organiser, currently at prototype stage, will be incorporated allowing young people and interested people of all ages the opportunity to discover electroacoustic music in its broadest sense from the points of view of listening, understanding and creating.

Andreas MNIESTRIS, Theodore LOTIS: *ERIMEE - Electroacoustic Music Research and Applications Lab*

Corfu is an important centre of electroacoustic music in Greece since the late 1990s due to a rich educational and artistic activity in this field supported by the Music Department of Ionian University. The foundation of the Electroacoustic Music Research and Applications Lab (EPHMEE, from its acronym in Greek) in 2003 was a result of this activity and it marks an important upgrade in its development. The EPHMEE focuses on the study and production of original work within the field of sonic art and technology and its aims include the structuring and support of education on mu-

sic and technology, the support of research and innovation in sonic art, the production of music and the dissemination of knowledge and artistic experience. The EPHMEE provides an essential educational contribution to the Music Department's course program of which an outstanding part is the graduate program on "the arts and technologies of sound" and its summer courses, taught by internationally distinguished academics. Another important function of ERHMEE, within the frame of the Music Department, is documentation and music production, which have so far resulted an archive of many hundreds of hours of recordings, six CD publications etc. In addition to these, the EPHMEE has also a significant impact on the greek electroacoustic music scene not only by maintaining a constant presence of this music through the organization of concerts and other related events, but also having initiated and supported the foundation of the Hellenic Electroacoustic Music Composers Association. A recent branch of the Lab's activities is the realization of the first greek environmental sound research project, which has extended its interdisciplinary character and has led, apart the actual research results, to important initiatives, like the foundation of the Hellenic Association for Acoustic Ecology and the first Hellenic conference on Acoustic Ecology (programmed for early December 2007). The EPHMEE is currently formed by Andreas Mniestris (director), Theodoros Lotis and Dionysis Batzakis, staff of the Music Department, as well as associate researchers including current post-doctoral, doctoral and graduate students.

Carlos. GUEDES, R. DIAS: *The program in electronic music composition and musical production at the School of the Arts of the Polytechnic Institute of Castelo Branco.*

(See Proceedings, pp. 378-382)

Composers' Forum

Wednesday, July 11, 2007, 17:00

Panayiotis KOKORAS: *Holophony. Morphopoiesis. Sound Scale. Construct Synthesis*

This presentation focuses on ideas and methods I used in my recent compositions. It is the summation of a long period of study, research and creative experimentation in the fields of perception and cognition, acoustics, sound synthesis, dsp, interactive technology and sound spatialization.

Juraj KOJS: *Continuum of Realities: Composing with Physical and Cyber Instruments*

Cyberinstruments by means of physical modeling synthesis build a continuum between physical and virtual reality in music. Physical modeling techniques, based on an understanding and mathematical modeling of sound production, can simulate sound sources such as musical instruments, environmental phenomena, and everyday objects. A physical model not only enables us to digitally replicate the properties of a sound source, but also to extend those properties beyond the limitations of the physical world. Further, we can model novel sound sources that do not exist in physical reality. Through a study of my selected works composed with cyberinstruments by physical modeling, I will identify what music physical models enable. I will discuss particular musical attributes this synthesis technique affords and others do not. What sorts of expansion of the virtual sonic landscape do the studied compositions suggest? How do composers transition from the physical to virtual reality? Specific methods and modes of interaction between composers and virtual instruments will be detailed. First, I will briefly discuss the musical works composed with cyberinstruments by Matthew Burtner, Claude Cadoz, Chris Chaffe, David Jaffe, Paul Lansky, Michelangelo, Hans Tutschku, and others. Then, I will proceed to my own works and exemplify my strategies in dealing with functional, timbral, and structural properties of music while composing with cyberinstruments. Discussion of the particularities, which arise from coupling the physical and cyberinstruments in an interactive performance, will conclude my talk.

Leigh LANDY: *Recycling or appropriation: "Oh là là radio"*

This talk focuses on Leigh Landy's compositional vision, in particular his interest in sound-based music that is both innovative and accessible and how that relates to the work performed at SMC. The composer will be using ideas such as the notions of the 'flexible artwork' and of the use of 'objets trouvés' in sonic works as introduced in his 3rd book "Devising Dance and Music". He will also focus on his more recent publications, which explore special issues related to where sound-based music fits in the greater scheme of things.

The possible role of electronics (and especially live electronics) in composition has evolved dramatically over the last thirty years. How has technology been integrated into compositional technique? From the 1970s, *Spirit of '76* (flute & electronics) and *Ophelia's Dream* (voices & electronics). In these works the technology is both necessary for the sound but also integrated theatre. In *Spirit of '76*, an 'accelerating tape delay' moves relentlessly across the stage; the audience sees as well as hears the growing tension of the rising process. In *Ophelia's Dream*, a soprano is 'trapped' by four microphones projected around the auditorium. We are outside and inside her head at the same time. From the 1980s, *Time Past IV* (soprano & tape) and *Piano Piece IV* (piano & tape). In these works different readings of Proust influence how the electronics work 'as memory'. From more recent years *Sentences* (soprano & live electronics), *Points of Departure* (harpsichord & live electronics), *Five Spaces* (electric cello & live electronics) and *Arenas* (piano, brass, live electronics) the electronics creates 'local' and 'field' transformations and landscapes. A secondary theme is a discussion of technological evolution (far faster than in any instrumental tradition). All the works to be examined have been 'updated' to recent technology. How is this achieved and is anything lost in the process? *Spirit of '76* is to be performed at SMC07 – how does MAX/MSP compare with the analogue electronics of 1976?

Thursday, July 12, 2007, 17:00

Stelios GIANNOULAKIS - Natassa CALOGIROU: *Real time sound creation and manipulation strategies in structured improvisation*

Stelios Giannoulakis: Laptop running virtual synthesizers, sampling and processing instruments, microphones, voice, trumpet, guitar, other objects.

Natassa Calogirou: Clarinet, bass clarinet, recorder, percussion.

Georgia SPIROPOULOS: *KLAMA. The voice from oral tradition in death rituals to a work for choir and live electronics*

Klama, a work for mixed choir, live electronics and prerecorded sounds, has its origin in the ritual lament of southern Peloponnese (Greece).

Cort LIPPE: *Real-Time Interactive Strategies for Timbral Control in the Frequency Domain*

For many years as a composer and researcher, the author has had a fascination with the Fourier Transform. With its efficient implementation in environments such as Max/MSP, PD, and SuperCollider, and the continuing exponential increments in power of the personal computer over the past two decades, the Discrete Fast Fourier Transform (DFFT) has become a standard tool of composers interested in the manipulation of timbre in the electroacoustic domain. It is the microscope, telescope, and particle collider of the discipline. Some of the author's own research has been to discover "new" techniques of timbral manipulation using the FFT, but the biggest challenge for composers working in this domain continues to be exploration of ways to meaningfully manipulate and interpret FFT data in a musical context. In a real-time interactive environment, expectation of some sort of correlation between a musician's performance and the sounding output of a computer system is high, and successful strategies for manipulation and interpretation of FFT data via performer input are paramount. Two mapping problems are completely intertwined: mapping of performer data, and mapping of FFT data. The author will give an overview of various frequency domain processing techniques, describe ways to manipulate these techniques, and present sound examples, as well as examples from the author's own music.

Joel CHADABE: *An interactive approach to composition*

Joel Chadabe will discuss the meaning of interactivity and offer various models of interactive processes in his work.

Friday, July 13, 2007, 17:00

Iannis ZANNOS: *Live performance and intelligent media environments*

In this talk I will first report on the programming tools I have been developing for a series of live performances and audiovisual installations. These tools enable the communication and coordinated control of diverse hardware and software components, some of which may be developed by other artists than myself and address different aspects of a work (sound, sensing, video, light control etc.). Based on experiences made in solo as well as collaborative projects, I will then reflect on the activity of the composer or sound artist in the context of technologically challenging projects that involve the cooperation of artists from different fields. Questions that arise from this discourse address the aesthetic, technological, procedural, social and other aspects of such works. Wherein lie- if they exist - the borders between programming, performing, design, coordination, production? What is the impact of these activities on the aesthetic direction of the resulting work? Rather than attempt to give any answers on a theoretical level, I will take a descriptive approach based on specific projects that I have participated in.

Curtis ROADS: *Composition in the electronic medium*

Every path engages tools, be it a fountain pen, a piano, an oscillator, or a computer. Each tool opens up aesthetic possibilities but also imposes aesthetic constraints. This lecture, based on a new book manuscript, sketches a new theory of composition based on the tools of electronic music. Electronic music is no longer new; it is an established field. Textbooks describe its technology, but the compositional implications of these tools are rarely analyzed. For all these reasons, this is an appropriate moment to step back and reevaluate all that has changed under the ground of compositional practice in the past fifty years. My goal is to update the conceptual framework and vocabulary in order to be able to speak precisely about the task at hand.

Apostolos LOUFOPOULOS: *Composing with Soundscapes*

This presentation focuses on the use of outdoors soundscape recordings as basic material for the composition of electroacoustic music. More specifically, it demonstrates some of the compositional choices, methods and processes followed to utilize the characteristics of the above material in order to create sound-behaviors and environments, which can be found in an acousmatic musical context as its fundamental constituents.

The sound examples are taken from works which derived from a research project involving environmental recordings that took place at the area of Acharavi, on the island of Corfu-Greece, during the year 2006. This research is part of the "Hellenic Soundscape Research and Study" program, funded by the Hellenic Ministry of National Education and Religious Affairs' Operational Programme for Education and Initial Vocational Training (O.P. "Education") and coordinated by the Electroacoustic Music Research Lab of the Music Department of Ionian University.

Performers' Biographies

Anastasia GEORGAKI (Greece): MIDI Accordion

Anastasia Georgaki was born in Lefkada in 1963. She studied Physics (University of Athens) and Music (accordion, piano, harmony, counterpoint). Furthermore, she studied Computer Music at IRCAM (DEA and Ph.D. in Music and Musicology of the 20th century). From 1995 to 2002 she taught Musical Acoustics and Computer Music at the Music Department of the Ionian University at Corfu where she was elected lecturer in 2001. She has participated in many computer music conferences and has published a number of articles concerning the synthesis of the singing voice, the interactive music systems and the Greek Electroacoustic Music; she has been a member of the organizing committee of two symposia on Music and Computers (Ionian University) and the International Symposium Iannis Xenakis (University of Athens). Currently she is member of the organizing committee of the 4th sound and music computer conference 2007. She has collaborated also with the Greek research institute ILSP in music information retrieval European projects (Wedelmusic). Since October 2002, she is Lecturer in Music Technology at the Music Department of the University of Athens. She participates in a research project of the Department of Computer Science (University of Athens) on physical modeling of greek traditional instruments and singing. She is also a professional accordion player (www.novitango.gr), and gives concerts all over Greece with her quintet. Her research interests include among others the control of synthetic voices via MIDI-accordion in an electroacoustic music environment, the archival of Greek Electroacoustic Music, and the aesthetics of the application of new technologies in music creation.

Andreas MNIESTRIS (Greece): Tenor Saxophone

Andreas Mniestris (saxophonist, composer) has been teaching electroacoustic composition at the Music Department, Ionian University, since 1994. He is the director of the Electroacoustic Music Research and Applications Lab, which is hosted at the Ionian University, since 2003. Andreas is a founding member of the Hellenic Association of Electroacoustic Music Composers and the Hellenic Association of Acoustic Ecology.

Giannis SAMPROVALAKIS (Greece): Clarinet

Born in Athens in 1975, he studied clarinet with Ch. Farandatos and music theory with P. Koukos at the Athens Conservatory. He continued his studies at the Hague Royal Conservatory under P. Woudenberg, obtaining the post-graduate soloist diploma (MMus) with specialization in contemporary music by Greek, Dutch and American composers. He attended courses on the classical and operatic repertoire of the clarinet with H. Hajek at the University of Vienna. He is also a graduate of the Department of Music of Athens University and a candidate for a Doctorate. He has collaborated with the major Greek orchestras and artistic organizations as clarinetist, orchestrator and music editor; while many Greek composers have entrusted him with the first performance and recording of their works. His discography includes works by M. Adamis, Th. Antoniou, D. Dragatakis, A. Kalogeras, Th. Karyotakis, D. Constantinides, N. Mamangakis and A. Filippakopoulos. As a

soloist, he has appeared with the 'Enarmonia' orchestra at the Herod Atticus theatre, with the Athens Municipal Orchestra, the Athens University Orchestra, the New Hellenic Quartet and the Louisiana Sinfonietta, as well as the Hellenic Contemporary Music Ensemble. His collaborations as a soloist with two legends of contemporary music, Gunther Schuller and Steve Reich, are of especial importance. Also a member of the Greek National Opera Orchestra, he teaches clarinet at the Athens Conservatory and the Ionian University.

Rebecca SIMPSON-LITKE (Canada): Soprano

Rebecca Simpson-Litke completed her Bachelor's degree in flute performance with a minor in vocal performance at the University of Manitoba in 2001. She continued her studies at the University of British Columbia, completing her Master's degree in Music Theory in 2003. She remains active in flute and vocal performance in Vancouver while working on her Ph.D. dissertation under the supervision of Dr. William Benjamin. Her research, which explores the layering of diatonic and symmetrical pitch material in early 20th century French music, is funded by the Social Sciences and Humanities Research Council of Canada.

Ermis THEODORAKIS (Greece): Piano

Ermis Theodorakis was born in Athens, Greece in 1979. He began his piano studies in 1990 with Nilyan Perez-Ioannidis and in January 1996 he obtained his Piano Diploma at the Athens Music Society Conservatory along with a unanimous award of a First Prize and of a special Iannis Xenakis prize, for his interpretation of the work *Mists*. He also studied composition with Yannis Ioannidis (Composition Diploma in 2002) and Musicology at the University of Athens (Degree in 2004). From September 2002 he followed post-graduate piano studies with Håkon Austbø (master program) at the Conservatorium van Amsterdam, where he graduated in May 2004 with Distinction. He studied further composition with Wim Henderickx at the same conservatory (Diploma in 2006), while he currently follows post-graduate composition studies at the Musical Academy of Leipzig with Claus-Steffen Mahnkopf. Since 2004 he is a PhD researcher at the University of Athens. Ermis Theodorakis has performed as a soloist in various Greek cities (Athens, Thessaloniki, Patras etc) and in several other countries (Holland, Cyprus, Germany, Austria, France, Luxembourg, UK, Hungary, the Czech Republic, Albania, USA). He has also collaborated as a soloist with orchestras and ensembles, such as the Athens State Orchestra, the Orchestra of Colours, the Kamerata Orchestra, the AGON Orchestra of Prague, the Greek Contemporary Music Ensemble. He attaches emphasis on the interpretation of contemporary music (giving the first performances of many works by contemporary composers), but he also interprets some important pieces of the classical repertoire, such as Beethoven's Sonata Op.106 and Brahms' 3rd Sonata. He has recorded 5 CDs of contemporary piano music (most of the New Viennese School piano music, piano works by Yannis Ioannidis, the complete piano solo works by Iannis Xenakis and piano pieces by various Greek composers). He has also recorded Xenakis piano concerto *Synaphai* with the Orchestra of Colours. Ermis Theodorakis has been awarded a prize by the Greek Union of Music and Drama Critics, for his recording of the complete piano solo works by Iannis Xenakis, and a UNESCO prize, for his services to Greek Contemporary music. He recently obtained two prizes (SACEM prize and Special Mention A. Boucourechliev) at the 7th International 20th Century Piano Compe-

tition in Orleans (France). Iannis Xenakis, in a recommendation letter for Ermis Theodorakis, has stated that he considers him an ideal interpreter of his music.

Conny THIMANDER (Sweden): Tenor

The Swedish tenor *Conny Thimander* was born in 1979 and made his opera debut in 2001 at the Vadstena Academy in Sweden. Thereafter he has been performing in various roles at the Drottningholm Court Theatre, Music Theatre of Värmland and at the Piccolo Regio in Torino in Italy. Since 2001 he is a member of the Swedish Radio Choir where he also appears frequently a soloist. In August 2005 he was awarded second prize in the competition "Gösta Winberg Award". Besides the classical repertoire Conny Thimander has a genuine interest for and "understanding" of contemporary music and not least an unusual open mind for interpreting voice parts together with electronics. He has collaborated with composer Lennart Westman in several pieces.

Katrin ZENZ (Greece/Germany): Flute

Her activity in the field of the performance of contemporary music in Greece and her investigation for the use of the extended techniques of the flute has brought *Katrin Zenz* in touch with many composers of the younger generation, which devoted pieces especially to her. She is also active in various formations of free improvisation and has a special interest in non-European musical traditions and the use of their wind instruments. She has been a founding member of the Vivier Trio, the Ensemble Actis and the Ensemble 2:13, a member of the Ensemble Köln, the Camerata Athens, the Ensemble Skalkottas. Solo performances at international festivals in Paris, Corfu, Donaueschingen, Athens, Stratford, Darmstadt, Volos. She studied flute at the State Music Academy in Detmold and electronic music in Basel. She is lecturing flute at the department of Music Science and Art at the University of Macedonia in Thessaloniki, and teaches regularly at international master classes (Stratford-on-Avon, Volos, Zagreb). In discography she appears with music for flute by Anastassis Philippakopoulos (Edition Wandelweiser 2006) and chamber music for flute by Yannis Ioannidis (Greek Music Society 1998).

Athanasios ZERVAS (Greece): Saxophone

Athanasios Zervas is a composer and saxophonist (DM-composition, MM-saxophone for Northwestern University, and BA-music from Chicago State University). Presently he teaches at the University of Macedonia.

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