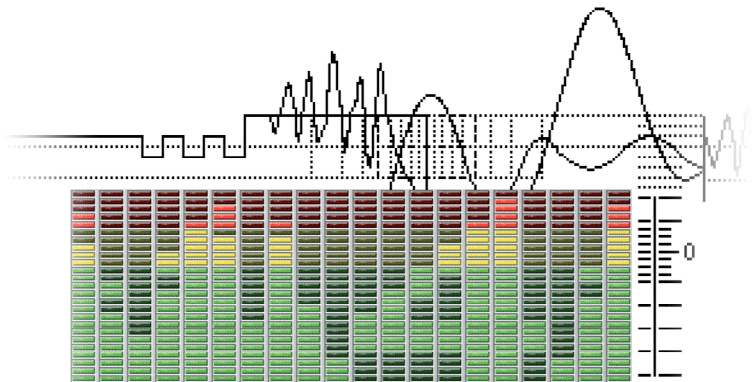


# LAC2006

## 4th International Linux Audio Conference

Lectures - Demos - Workshops  
Concerts - Linux Sound Night



27.-30.04.06

ZKM | Institute for Music and Acoustics

# Editorial

It is already the fourth time that the Linux Audio Developers gather at the Institute for Music and Acoustics of the Center for Art and Media in Karlsruhe. All started with the presentation of ideas, concepts and results and quickly it became clear that the personal response towards the presentations increased the motivation and the quality of the developments. We were glad to welcome several key-developers here in Karlsruhe and to see how enthusiastically they all contributed to the conference. It turned out that the meetings filled the missing link in between the hard work of programming and communication in the discussion groups. Now the conference gained a quite professional level in its organisation structure: there are proceedings, papers, workshops and concerts and I hope that this time everything is happening as smooth as in the former years thanks to the preparations of Götz Dipper, Frank Neumann and Marc Riedel.

The Technical University (TU) of Berlin has expressed their interest in hosting the conference. We are very glad about this and we take it as a further proof of the importance of the LAC conference. So, next year the conference will take place at the TU Berlin. We believe that the TU Berlin as a location of outstanding Linux Audio Development will offer us a great conference next year!

A handwritten signature in black ink, consisting of a stylized 'L' followed by a long horizontal stroke that curves upwards at the end.

Ludger Bruemmer  
Head of the ZKM | Institute for Music and Acoustics

## Welcome!

We would like to welcome you to the 4th International Linux Audio Conference (LAC2006), at the ZKM | Zentrum für Kunst und Medientechnologie (Center for Art and Media) in Karlsruhe, Germany. In this booklet you will find the conference programme (talks, concerts, workshops, demos) and a few more useful information we have brought together.

## Info Desk

The LAC2006 “info desk” is located right outside of the lecture hall (please do not confuse it with the ZKM ticket counter in the middle of the main entrance hall). There you can get help regarding many questions about the conference, about nearby restaurants, hotels and more.

## Registration - Name Tags

In order to make it easier to recognize people during the conference we think it is a good idea to ask every attendant to wear a name tag. If you have registered with the conference website in time you will get your readily-prepared name tag at the info desk. Otherwise you can still register at the info desk and get a hand-made name tag.

## Workshops

We call “workshop” everything that takes place in smaller seminar rooms rather than in the lecture hall. Because of the limited space you have to register at the info desk before attending a workshop. Meeting point for all workshops is the info desk, 5 minutes before the workshop starts.

You can still propose a new workshop if you like. Please do so at the info desk. The main workshop day is Fridayafternoon. You will get a time slot if there is still a room available. If all rooms are blocked by other groups, you are free to pick up your participants, sit down at a desk in the lobby, and chat&drink a coffee with them.

## Plug & Chill

The last part of the “Linux Sound Night” on Saturday is called “Plug & Chill”. It is something like an “open stage” or “jam session”. It is open for every conference attendant to participate actively. You can decide about participating spontaneously on Saturday evening. However, if you know beforehand please do not hesitate to register for it at the info desk. All registrations are handled as “first come first serve”. So, if you are too late you might not get a slot... Contributions to “Plug&Chill” should generally not exceed 10 minutes.

During the conference some seminar rooms can be used as rehearsal rooms to prepare contributions for Plug&Chill. Again, please contact the info desk for this.

## Proceedings

The “Conference Proceedings” comprise all papers that have successfully undergone the review process. We have a limited number of printed copies available at the info desk at cost for EUR 7.-. If, while registering, you marked the checkbox that you are interested in a printed copy please tell us immediately when picking up your name tag. From Friday on copies

# Editorial

will be sold on a “first come first serve” basis. In any case you can download the proceedings in PDF from the conference website for free, shortly after the conference.

## Facilities

The room you are probably sitting in while reading this is the “Vortragssaal” (lecture hall) where most presentations will be done. When leaving this room, you directly look at a black-painted cinema-like room, the “Medientheater” (Media Theatre). It will be used e.g. on Saturday for a parallel second track of presentations. The “Kubus”, a large cube-shape building with blue glass facades (outside the main building, attached to it through a passage) houses the concert room. The opening concert on Thursday and the first concert on Saturday will take place here. When you walk up to the entrance of the Kubus (reachable from the ZKM lobby through a stairway to the 1st floor) you are passing through the “music balcony” where the “Linux Sound Night” on Saturday will take place. Beverages will be sold during the sound night, and this, coupled with chillin’ electronic beats and lighting, should bring everyone into a nice relaxed mood.

## Internet

Near the music balcony our “Surf Station” provides free Internet access. Hubs and Network cables have been installed where you can plug in your laptop and read your mails, search the web for more information - or even release the latest version of your audio software project... The network is configured for DHCP, so you can hopefully just “Plug&Go”.

## Live audio & video streams

We will again have live audio/video streaming of the lectures and software demos. This way, people who cannot attend the conference in person are still able to participate. They can even take part actively by joining an IRC channel and e.g. asking questions. A moderator will bring forward selected questions in the Q&A session after each presentation.

Note to the on-site participants: If you have questions to the speaker, please wait for the chairman to hand you the microphone, then first state your name and country, and then ask your question. This allows the externals to follow the dialogue better.

## Active Participants

All active participants (speakers, musicians etc.) get free admission to the Kubus concerts. Simply show your name tag to the person at the Kubus ticket counter (at the Kubus entrance) and you will get your free ticket. If you encounter problems and you believe this is a mistake, please ask at the info desk.

On the 2nd floor there is a room where we offer free coffee, tea, small snacks for all active participants (speakers, composers, musicians, etc.)

## ZKM\_Exhibitions

All participants get free admission to the exhibitions currently running at the ZKM. Simply show your name tag to the person at the ZKM ticket counter (in the main entrance hall) and you will get your free ticket.

## Thanks to..

It is becoming increasingly difficult to list all helping hands because there are so many of them. Still, we want to mention a few outstanding ones:

- Jörn Nettingsmeier and Eric Rzewnicki, for conducting the live streaming
- All reviewers, for doing such a good quality-assuring job
- All authors and musicians for providing high-quality work
- All people that help carrying out the conference
- All of you who have come here to fill the conference with life!

## Sponsors

Every year, some companies sponsor the conference by donating either money or bandwidth (for the live streaming). This year, our thanks go (again!) to Radio Free Asia that have not only provided bandwidth for the streaming, but also made it possible for Eric Rzewnicki to come to the conference and support us. We are very grateful for this support!

Now, with all this being said, we hope you will enjoy your stay in Karlsruhe, and we wish you a successful LAC2006!

Götz Dipper

Frank Neumann

Marc Riedel

LAC2006 Organization Team

**Organization Team LAC2006** Götz Dipper :: ZKM | Institute for Music and Acoustics – Frank Neumann :: LAD – Marc Riedel :: ZKM | Institute for Music and Acoustics **ZKM** Peter Weibel :: CEO – Jürgen Betker :: Graphic Artist – Hartmut Bruckner :: Sound Engineer – Ludger Brümmer :: Head of the Institute for Music and Acoustics – Tobias Ehni :: Event Management – Uwe Faber :: Head of the IT Department – Hans Gass :: Technical Assistant – Joachim Goßmann :: Tonmeister – Gabi Gregolec :: Event Management – Achim Heidenreich :: Event Management – Martin Herold :: Technical Assistant – Martin Knötzele :: Technical Assistant – Andreas Liefländer :: Coordination, Technical Assistant – Philipp Mattner :: Technical Assistant – Alexandra Mössner :: Assistant of Management – Caro Mössner :: Event Management – Chandrasekhar Ramakrishnan :: Software Developer – Thomas Saur :: Sound Engineer – Joachim Schütze :: IT Department – Anatol Serexhe :: Technical Assistant – Berthold Schwarz :: Technical Assistant – Bernhard Sturm :: Production Engineer – Manuel Weber :: Technical Director of the Event Department – Monika Weimer :: Event Management – Susanne Wurmnest :: Event Management **LAD** Jörn Nettingsmeier – Eric Dantan Rzewnicki :: Radio Free Asia, Washington

# Lectures

## Thursday, April 27th Lecture Hall

11:00

*Victor Lazzarini*

Keynote

12:00

*Fons Adriaensen*

Acoustical Impulse Response Measurement with ALIKI

14:00

*Arthur Clay / Thomas Frey*

Unbound: The GoingPublic Software

15:00

*Lee Revell*

Realtime Audio vs. Linux 2.6

16:00

*Asbjørn Sæbø,*

*Peter Svensson*

A Low-Latency Full-Duplex Audio over IP streamer

17:00

*Marije Baalman*

swonder3Dq: software for auralisation of 3D objects with Wave Field Synthesis

## Friday, April 28th Lecture Hall

11:00

*Yann Orlarey, Albert Gräf,*

*Stefan Kersten*

DSP Programming with Faust, Q and Supercollider

12:00

*Georg Bönn*

Marching protest with granular synthesis: On the making of 'Genova VII, 2001'

14:00

*Agostino DiScipio*

Using PD for Live Interactions in Sound. An Exploratory Approach

## Saturday, April 29th Track 1 - Lecture Hall

11:00

*Fons Adriaensen*

Design of a Convolution Engine optimised for Reverb

12:00

*Josh Green*

Sampled Waveforms and Musical Instruments

14:00

*Frank Barknecht*

128 is not enough - Data Structures in Pure Data

15:00

*Eric Lyon*

A Sample Accurate Triggering System for Pd and Max / MSP

16:00

*Victor Lazzarini*

Scripting Csound 5

17:00

*Hartmut Noack*

Linux and music out of the box

## **Saturday, April 29th** **Track 2 - Media Theatre**

11:00

*Andreas Krach,*  
*Martin Rumori:*  
asciimatrix (Demo)

12:00

*Stefan Westerfeld, Tim Janik:*  
BEAST (Demo)

14:00

*Michael Iber*  
sounds like sounds we like

15:00

*Daniel James,*  
*Free Ekanayaka*  
64 studio - creative and  
native

## **Sunday, April 30th** **Lecture Hall**

11:00

*Ivica Ico Bukvic*  
Linuxaudio.org - Who,  
What & Why

12:00

*Martin Rumori*  
footils. Using the foo  
Sound Synthesis System  
as an Audio Scripting  
Language

14:00

*Jürgen Reuter*  
Ontological Processing of  
Sound Resources

15:00

Presentation of Work-  
shop results

# Workshops

## Thursday, April 27th

14:00

*Leon Shiman*

Media Application Server  
Mediathek1

## Friday, April 28th

15:00

*Reinhard Katzmann and  
Georg Rudolph*

NoteEdit-Current state  
and future development  
Mediathek1

15:00

*Yann Orlarey, Albert Gräf and  
Stefan Kersten*

Functional DSP Program-  
ming with Faust, Super-  
Collider and Q  
Mediathek2

15:00

*Torben Hohn*

netjack  
Atelier 5

15:00

*Fons Adriaensen*

Acoustical Impulse Re-  
sponse  
Kubus

18:00

*Jan Jacob Hofmann*

Ambisonics  
Mediathek2

## Saturday, April 29th

11:00

*Michael Bohle*

openSUSE JAD Installati-  
on and music production  
Mediathek1

16:00

*Fons Adriaensen*

Aeolus, two years later  
(Demo)  
Atelier 5

17:00

*Fons Adriaensen*

Kubus IR (Demo)  
Atelier 5

# Concerts

**Thursday, April 27th**

**Opening Concert**  
**ZKM\_Kubus**  
**20:00**

*Georg Bönn*  
Genua VII 2001

*Eric Lyon*  
Trajectories

*YongJoon Yang*  
Breath

*Massimo Fragalà*  
Movimenti

*Olaf Hochherz*  
Nachher halt

*Victor Lazzarini*  
Mouvements

*Jan Jacob Hofmann*  
Horizontal and Vertical  
Lines

*Agostino Di Scipio*  
Modes of Interference  
Trumpet: Marco Blaauw

**Saturday, April 29th**

**Open Source Sounds**  
**ZKM\_Kubus**  
**20:00**

*Panayiotis Kokoras*  
Response

*Florian Zwissler*  
Doppelbrunn

*Victor Lazzarini*  
Time-Lines Ia  
Guitar: Jürgen Ruck

*Orm Finnendahl*  
Fälschung  
Strings: Helios StreichQuartett  
Laptop: Orm Finnendahl

*Ludger Brümmer*  
Repetitions

*Martin Kaltenbrunner,*  
*Marcos Alonso*  
*(Music Technology Group,*  
*Universität Pompeu Fabra,*  
*Barcelona Spain)*  
reactTable

**Saturday, April 29th**

**Linux Sound Night**  
**ZKM\_Musikbalkon**  
**22:00**

*YUE*

*Frank Rübler*

*JackLab*  
*(Michael Bohle, Sören Hei-*  
*drich, Wilken Bösch)*

*Daniel James*

*Frank Barknecht*

**plug & chill**  
**ZKM\_Musikbalkon**  
**about midnight**

# Opening Concert 27.04.06, 20:00

Georg Boenn

## **Genova VII 2001** (15:34)

I wrote Genova VII after the G8 summit in 2001 using a part of a reportage about the death of a demonstrant who was shot by a policeman when he tried to attack a policecar.

The piece tries to express a tender reflex of the enormous tension caused by the ever growing gap between rich and poor. It may be a frustrating piece as it doesn't offer any solution and circles itself remorselessly.

Recordings of traffic at the Columbus Circle in New York, a place on which the statue of a Genovan points to the East were also used as sound sources.

the piece which is a new version of 2002 uses an awful lot of granularsynthesis for which the author wrote a special programme in C++.

Georg Boenn has studied composition in Cologne (Musikhochschule) and Paris (IRCAM). Since then he worked continuously as a composer receiving commissions from various institutions and musicians. Concert and radio performances of his works in Germany, France and the USA. As a programmer he developed various music software applications in C/C++ and gained industrial experience as software developer in this area. He has undertaken research in computer music and sound synthesis at IRCAM (Paris, France), ZKM (Karlsruhe, Germany), CCRMA (Stanford, USA) and at the University of Music in Bremen, Germany. He is currently teaching at the University of Glamorgan in Wales, UK, and writing his PhD thesis on Algorithmic Composition at the University of Bath.

Eric Lyon

## **Trajectories** (7:35)

Trajectories was composed in August 2004 for the Harvest Moon Festival on Multi-speaker works. The central concern is to present multiple spatial trajectories that may be experienced contrapuntally and as fundamentally musical utterance. To this end the timbral palette is restricted to sinusoids and noise, sometimes modified with simple filters. Trajectories, tunings and tempi are attached to individual sounds as markers to distinguish individual paths cooperating within a given texture.

Eric Lyon is a composer and developer of computer music software. He is a co-founder and core composer of the Bonk Festival of New Music. His theoretical writing includes papers on the music of Aphex Twin and XTC. Lyon has composed a large number of works for various instrumental combinations, computer-generated music, and hybrid works combining pre-recorded or live computer music with live performance. He has taught computer music at Keio University, The International Academy of Media Arts and Science (IAMAS), Dartmouth College and is currently lecturer in electroacoustic music at the University of Manchester.

27.04.06, 20:00

# Opening Concert

YongJoon Yang

## **breath** (6:43)

Tape music for 4 channels

Marthe said: "That place is not suitable for being alone." It is one of the lines of Faust.

I imaged the not suitable place existing as various situations, and wanted to express the situations in her (Marthe's) mind, while she said this sentence. That is, she looked at herself and determined whether the place was proper or not.

I tried to build a variety of layers with recorded sound materials: Layers mean various pitches, timbre, space position etc. In order to realize these functions, I had mainly used for sound production "Csound" and for algorithmic recursive tree structure "Common Lisp." All on LINUX.

Born in South Korea in 1966, YongJoon Yang graduated from the JangShin Uni in Seoul with the Bachelor of Music in composition.

In 1997 he came to Germany and studied until 2004 Electronic Composition with Ludger Brummer and Dirk Reith at the ICEM of the Folkwang College in Essen. Afterward he worked as a guest artist at ZKM | institute for Music and Acoustics. He returned to Korea in August 2005 and now works as a composition lecturer at the JangShin Un. and KookMin Uni..

Massimo Fragalà

## **Movimenti** (4:48)

During the composition of this piece I drew inspiration from the word „movement“. I have intended to translate into musical terms the „movement“ as the act of moving itself, trying to give dynamism to the sonorous events through the idea of slow or rapid movements, or regular and irregular ones and transforming the sounds accordingly. My aim has also been to achieve, through FM synthesis, rich and complex timbres. This has been possible controlling some parameters such as carrier and modulator ratio and the value of the index of modulation which is controlled in many different ways in order to produce a continuous time-varying spectrum. All the sounds have been created with Csound.

Massimo Fragalà received a diploma in classical guitar at the Istituto Musicale „V. Bellini“ (Caltanissetta, Italy) and a diploma in Electronic Music from Istituto Superiore di Studi Musicali „V. Bellini“ (Catania, Italy). He studied Electronic Music with Alessandro Cipriani and currently with Emanuele Casale. One of his tape compositions has been published on CD by Electronic Music Foundation.

He was commissioned by CEMAT (Rome, Italy) and his music has been performed in many countries all over the world, and has received several prizes and selections, including ICMC 2003 (Singapore), 4° Concorso Internazionale die Composizione Musicale Elettronica „Pierre Schaeffer“ (Pescara, Italy), CEMAT (Rome, Italy), Centro Ricerche Musicali (Rome, Italy), ICMC 2005 (Barcelona, Spain), EAR Sounds Electric 2005 (Maynooth, Ireland). He also studied with visual artist Alba D'Urbano, focussing on the relationship image-sound, at the Hochschule für Grafik und Buchkunst (Leipzig, Germany).

# Opening Concert 27.04.06, 20:00

Olaf Hochherz

## **halt nachher** (4:24)

The piece is a pall off small sounds. You can guess the form off the pall just by some petite redundancies.

The composition is realised with the small language based sound processing software, called shwobl. The concept of the sound processing is based on the idea of understanding a sound as a cronological sequenz of periodes. The language defines recursive funktions to group, sort and transform the periodes, depending on there context.

Olaf Hochherz war born in Wuppertal in 1981, lives and works in Berlin. Since 2000 improvisation work together with Christoph Irmer. Study of composition at the Folkwang Hochschule in Essen between 2002 and 2005. Since 2005 study of philosophy and computer-science in Berlin.

Victor Lazzarini

## **Mouvements** (Hommage à Risset; 20:09)

for eight tracks

“Mouvements” is a piece of pure computer music, as it tries to discover textures and sounds only achievable by careful synthesis procedures. It started off as a study on some ideas launched by the pioneers of the genre and it became a homage to one of them.

The piece applies single-mindedly the same organisational principle to different means of creating sounds: additive, subtractive, frequency-modulation and formant synthesis. This principle provides the musical meta-theme, which is implemented in different ways throughout the piece, revealing itself as arpeggiating figures, spectral sweeps, colour (timbral) changes and various beating effects. The title of the piece refers to the ever-present dynamic that is an inherent aspect of that principle.

Victor Lazzarini was born in Londrina/ Brazil in 1969. He started his musical studies at the local conservatory, where he was taught piano and music theory. He first studied composition at the winter courses of the Festival de Música de Londrina, in 1985 and 1986, as a pupil of Aylton Escobar and Claudio Santoro. In the period of 1987-93, he completed his BMus at the Campinas State University (UNICAMP), where he was a composition pupil of Damiano Cozzella and Almeida Prado. In 1993, he was awarded a scholarship to pursue postgraduate study in the UK, at the University of Nottingham, obtaining his doctoral degree in 1996. After a short spell in Brazil, he was appointed Lecturer in Music at the National University of Ireland, Maynooth. He is currently the director of the Music Technology Laboratory at the NUIM. His works are available at the Contemporary Music Centre, in Dublin, some of which have been released on CDs in Ireland, England and Brazil. Awards received include an Honour Mention for his orchestral piece *Anima Mea*, in Brazil (1995); the Heyman Research Scholarship, for the progress of his doctorate research; the Hallward Composition Prize, for his *Magnificat*, in England (1996); the NUI New Researcher Award (2000), for his research work at NUI Maynooth; and the ICUF Scholarship (2005), for a research project in Canada.

27.04.06, 20:00

# Opening Concert

Jan Jacob Hofmann

## **Horizontal and Vertical Lines** (7:55)

Two kinds of elements mark the context of the piece: Sounds of extremely long duration in the distance, shimmering and sharp like steel, stretched out in the timeline. Generated by patterns of chaotic oscillation and being non-linear, these horizontal elements refer to infinity. Their vertical organisation, the proportion of pitch among each other is organised by the harmonic ratio though.

Much closer, several impulses: Sounds of infinite shortness, containing the whole spectra of frequencies in a mathematical sense, but having no extension in time. Being strictly vertical, they contradict with the long stretched horizontal elements.

These two sonic elements, considered as horizontal and vertical, set the background structure of which matter is generated.

The sound for this composition is derived from a non-linear algorithm for sound generation by physical modelling, as from granular synthesis. All the sounds have been created using Csound.

Jan Jacob Hofmann was born in 1966 in Duesseldorf. Diploma, in architecture at Fachhochschule Frankfurt/M, University Of Applied Sciences in 1995, worked then at H.G.+P., Frankfurt, an office for architecture. Entered the class of Peter Cook and Enric Miralles at the Staedelschule Art School Frankfurt/M in 1995, a postgraduate class of conceptual design and architecture. Diploma at the Staedelschule in 1997. Works as a composer, photographer and architect since.

Dealing with sound composition and electronic music since 1986. Music for performances. Course for sound-spatialisation and psycho-acoustics at the CRM /Rome with M. Lupone/ L. Bianchini in Nov. 1998. Since April 2000: Work on the spatial- sound project. Created several Csound instruments for spatialisation of sound via 2nd Order Ambisonic. First presentation of "Sonic Architecture " at the 19th AES Conference for spatialisation of sound, sound engineering and recording at Schloss Elmau in 2001. Several presentations on international festivals since.

Jan Jacob Hofmann became "Associate Researcher" at the S.P.A.R.G. (Signal Processing Audio Research Group) at the University of Derby, England in 2005.

Agostino Di Scipio

## **Modes of Interference** (10:00)

audio feedback system with trumpet and electronics – world premiere

This work is a composed dynamical system, entirely based on an audio feedback loop. The two ends of the loop are a miniature microphone (inside the trumpet), and (two) loudspeakers. In between is a trumpet (a tube with its natural resonances) and a signal-processing computer. With a very high feedback gain, the loop results in the so-called Larsen effect. While Larsen usually represents a technical problem in sound systems, in this composition it is actually the main source of music (a problem is turned into an opportunity). The trumpet player explores the sonic potential of the system by interfering with Larsen in several manners,

# Opening Concert

27.04.06, 20:00

either modulating the resonances of the instrument (valve action makes the tube act like a variable filter internal to the feedback loop), or introducing noise (percussive effects, "breath" sounds, etc.). The computer dynamically adjusts the feedback gain, trying to keep the overall system in equilibrium at all times, avoiding signal saturation. The computer also transforms and extends all sounds being produced, and the transformed sounds themselves interfere with the feedback loop. The overall system remains always subject to fluctuations and perturbations from the surrounding environment. Commissioned by ZKM Karlsruhe.

Agostino Di Scipio, born in Naples, 1962. Since 1985 he lives in L'Aquila, a town in the inner mountains of the Italian peninsula.

Composer of a variety of sound works, including electroacoustic music, sound installations and music scored for instrumentalists (soloists or ensembles) with live electronics. Many of his compositions develop from unconventional sound synthesis/processing methods inspired to phenomena of noise and turbulence. In recent work, Di Scipio focuses on the "man-machine-environment" feedback loop (for example his live-electronics solos titled Audible Ecosystemics).

Electronic Music Professor at the Conservatory of Naples, and instructor in live electronics at Centre Creation Musicale Iannis Xenakis (CCMIX), Paris. A former "visiting faculty member" at the Dept. of Communication and Fine Arts of Simon Fraser University (Burnaby-Vancouver, 1993), and former "visiting composer" at Sibelius Academy Computer Music Studio (Helsinki, 1995), in the year 2004 he was visiting professor at the University of Illinois, Urbana, and lecturer at the Summer School "Media and Beyond" of the Johannes Gutenberg-Universität, in Mainz. In 2004-2005 Di Scipio lived and worked in Berlin as artist-in-residence of the DAAD Berlin Künstlerprogramm.

Marco Blaauw, trumpet

Born in 1965, Marco Blaauw studied at the Sweelinck Conservatorium in Amsterdam, later continuing his studies with Pierre Thibaud and Markus Stockhausen. "I first heard New Music on television as a child. I saw how people in the audience covered their ears with their hands. That was exactly what I wanted - for people to make an effort and be surprised at what they are hearing."

Why this instrument? At first, a practical decision: "I grew up in a village. There was a band there, and it needed a trumpet player." Then one of his life's goals: "I always had a picture in my head of a troubadour spreading the latest news. That's what I want to do too - with my trumpet." And: "The trumpet has been neglected in many regards. I see this as my appointed task - to develop the technique of the trumpet and to interest composers in the instrument."

The results up to now: Works by Richard Ayres, Martijn Padding, Gijsbrecht Roye, Isabel Mundry, Peter Eötvös and others, written for and suggested by Marco Blaauw; intensive collaboration with Karlheinz Stockhausen; many performances as soloist.

Panayiotis Kokoras

**Response** (9:06)'

„Response“ for tape was composed during the summer of 2001. It follows „Breakwater“ as the second piece of a project I process called „Grand Piano Trilogy“. I decided to take a unified sound source, the sound of the piano, in order to go deeper into the sound and the structure of it, to investigate its own gravities and tensions.

The piece is characterized by a wide variety of both artificial and natural responses, triggered by energetic impulses and resonators. The response vibration may be a simple harmonic motion based on a minor second, or a more complex action created by distorted sounds or inharmonic textures. The response's impulse may be as short and simple as a click of a spire along a string, a cluster produced by a modified hammer inside the piano, or a damped or pizzicato note. In these examples, the sound material is manipulated in the time domain through convolution, granular processes, time-stretching and other techniques. On the other hand, the response may be an elaborate resonant structure itself. Energy is applied as a repeated stream of pushes functioning as sound generators. The sources used to achieve this are circular, sweeping and accelerated strumming sounds performed inside the piano with different materials such as glass or plastic. The processing techniques which are applied are in frequency domain FFT-based cross synthesis and analysis / resynthesis, as well as more standard signal processing, such as harmonizing, frequency shifting, phasing and specialization. The piece unfolds as the initial idea is gradually developed and transformed. Sections which involve pitch implementation are followed by inharmonic sections and so on. Each phrase is built up by many short sound samples in a kind of micro montage / mixage, revealing interesting timbral interactions between them.

This piece was awarded First Prize at the electroacoustic composition competition Musica Viva 2002 in Lisbon, Portugal; Second Prize at the biennial acousmatic composition competition Noroit Petitot 2002 in Arras, France.

Panayiotis Kokoras (Greece, 1974) studied composition with I. Ioannidi, K. Varotsi and classical guitar with E. Asimakopoulou in Athens, Greece. In 1999 he moved to England, for post-graduate studies where he completes his MA and PhD in composition with T. Myatt at the University of York with funds among others from Arts and Humanities Research Board (AHRB) and the Aleksandra Trianti Music Scholarships (Society Friends of Music).

His works have been commissioned by institutes and Festivals such as FROMM (Harvard University), IRCAM, MATA (Music at the Anthology), SpringFestival (The University of York), Gaudeamus (Netherlands), and regularly performed in international festivals and concert series throughout Europe, Asia and America. His compositions have received 24 distinctions and prizes in international competitions among others Musica Viva 2005 and 2002, Portugal; Look and Listen Prize 2004, New York; Gaudeamus 2004 and 2003, Netherlands; Bourges Residence Prix 2004, France; Insulaw Electronicae 2003 Italy; Jurgenson Competition 2003, Russia; Seoul international competition 2003, Korea; Takemitsu Composition Award 2002, Japan; Noroit Prize 2002, France; CIMESP 2002, Brazil; Musica Nova 2001, Check Republic; Métamorphoses 2000, Brussels.

He is concerned to see how he, the listener, maps the acoustic signal into a structural repre-

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sentation on a psychoacoustic basis of the perception of music. His compositions include significant influences of the electroacoustic studio upon acoustic instrumental compositions and vice versa. Panayiotis Kokoras' creative output ranges from acoustic works to mices media, improvisation and tape one.

He is founding member of the Hellenic Electroacoustic Music Composers Association (HELM-CA) where he is member of the board. He taught at the Technological and Educational Institute of Crete, Department of Music Technology and Acoustics. Since October 2004 he has been teaching at the Aristotle University of Thessaloniki, Department of Music Studies, Greece. His music is published by NOR, Miso Musica, SAM / CEC, Independent Opposition Records ICM 2004 and distributed in limited editions by LOSS, Host Artists Group, Musica Nova, and others.

Florian Zwissler

## **Doppelbrunn** (6:10)

Electronic Music does not prevent composers from getting into the drift of cliché-like use of sound as material. This piece tries to capture a different, maybe somewhat sceptic perspective on the present commonness of sounds in Electronic Music.

The uniformity of material in this piece is being distributed on the surface as well as beneath several times. The voice at the end of the piece seems to provide an obvious counterpoint to the other synthetic material on the one hand and the context of reception of the whole piece on the other hand. Other non-synthetic material within the piece may remain undiscovered... All sounds in this piece have been created on a Linux-basec guile-scheme-setup. The structures are generated by a rather simple scheme-procedure controlling a csound-based synthesis, which involved simple impulses processed by delaylines and bandpass filters.

Florian Zwissler studied musicology, linguistics and philosophy at the universities of Tuebingen and Cologne. After the magister exam in 2002 (Cologne University) he started studying Electronic Composition at the ICEM (Institute for Computer Music and Electronic Media) at Folkwang-Hochschule Essen.

He has been attending the Stockhausen Courses for Composition at Kuerten since 2000 as technical assistant. Recent projects e.g. involved collaboration with choreographer Leandro Kees and the realization of the Music-Theatre-Project „Every Computer is Red“ with the group „Prospect Park“ at the ZKM Karlsruhe and Hebbel-Theater in Berlin in March 2005.

Victor Lazzarini

## **Time-Lines Ia** (7:52)

for guitar and computer

“Time-Lines Ia” is a rhythmically-driven piece, it uses the computer to create an immersive environment for the guitar.

For the CV of Victor Lazzarini see concert program of Thursday.

Orm Finnendahl

**Fälschung** (14:00)

“Fälschung” (Fake) for String Quartett, Laptop, 5-channel Tape and Live Electronics was commissioned by MaerzMusik, a Festival of Contemporary Music of the Berliner Festwochen. The piece centers around the connotations of authenticity of foreign “exotic” music, in this case Eastern European Music from Bulgaria, Rumania, Turkey and Poland. This music is characterized by a very heterogenous mixture of amalgamed musical styles and instruments. In addition to that we nowadays hear this music in very different contexts: Turkish fast food places, World Music departments of record stores, performed in traditional costumes during our late night dinners in Eastern European Holiday resorts, as soundtracks of movies etc. In all cases, the notion of “authenticity” and “originality” becomes doubtful and somewhat related to our clichés of seemingly “unspoiled” “natural” expression. But also on the musical level it is often hard to distinguish the intentional from the unintentional e.g. in the use of intonation or rhythmic deviation.

Contemporary Classical Music in Western Europe has long been rather self centered and driven itself into growing isolation considering its own achievements as superior to popular forms of expression. Exchange mainly meant integrating foreign instruments into its own system, trying to expand it while keeping it intact and somewhat unquestioned, very similar to the vast majority of Western Popular Music. Its “invasion” into other musical cultures most often took the form of an imperialistic attitude, integrating some of their properties as exotic stimulation but maintaining its own basic principles.

Fälschung tries the opposite approach: It confronts a well established classically trained string quartett with music it has not been trained to play, trying to imitate the different forms of representation of this music: Responsorial structures between the Live Ensemble and the Tape containing poor quality renderings of transcriptions of the music, the use of 4 Ghetto Blasters instead of instruments, improvisational parts including live processing of the instrumental sounds with an on stage Laptop player, etc. The course of the music also follows this idea: Extrapolating different parts of the quotations, the music masquerades itself taking on different musical styles thus questioning the notion of “originality” from yet another angle.

Born in Düsseldorf in 1963, Orm Finnendahl studied Composition, Musicology and Computer Music in Berlin after some involvement in the Berlin experimental music scene. 1988/89 scholarship at the California Institute of the Arts in Los Angeles. 1995-98 continuing studies with Helmut Lachenmann in Stuttgart. Collaborations with ensembles specializing on contemporary music (Ensemble Modern, recherche, Mosaik, Champ d'action, etc.) as well as with video and multi media artists, dancers and soloists (Palindrome, AlienNation, Burkhard Beins, etc.). Numerous awards and prizes, among them Kompositionspreis Stuttgart, Busoni Prize Berlin, CYNETart Award Dresden and Prix Ars Electronica Linz. A portrait CD for the “Edition Zeitgenössische Musik” of WERGO Records is in preparation.

Currently Orm Finnendahl is Professor of Electronic Composition and Head of the Electronic Studio at the Musikhochschule Freiburg.

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The Helios Stringquartett are UlrikeStortz (1st violin), Nina Zedler (2nd violin, as guest), Jessica Rona (viola, as guest) and Scott Roller (violoncello).

Since the autumn 2001 this ensemble plays concert programmes as well as at events and often in cooperation with artists of different disciplines. Together with the sound director and electronics specialist Bryan Wolf, it has performed in several cities all over Germany together. Within this cooperation numerous productions of works by composers such as George Crumbs (Black Angels), Steve Reich (Different Trains), Karlheinz Stockhausen (Tierkreis), Kaija Saariaho (Nymphaea) to name just a few. In England they produced two concerts for the BBC.

Their work is characterised by a shared enthusiasm for improvisation in all sorts of styles, great charisma and expression.

Ludger Brümmer

## **Repetitions** (21:40)

world premiere of the 20 channel version

One of the most significant and fascinating Gestalten in Music are the repetition since it represents a specific relation between redundancy and information. Repetitions itself limit their information to a single pitch and duration. It is a basic figure, a starting to introduce more information. It can be layered, or pitches can be introduces gradually. In combination with two pitches instead of one, the trill is a variation of a repetition.

Because of that repetitions and its siblings trills and ostinato were used in barock and classical stiles by composers like Scarlatti, Beethoven and many others. Even in modern times repetitions are used extensively by Stravinsky or in "Minimal Music".

In electroacoustic music repetitions are interesting material since it is easy to create dense layers with them. I have done this in former works like ->Thrill<- and Lizard Point, were layers of integer proportions were placed on top of each other.

The work Repetitions explores the topic of repetition through its musical structure as well as through the used sound material. There is a work composed by Stravinsky which takes advantage of repetitive patterns like no others. Sound of this work are the source for the granulation processes in this piece.

The first version of Repetitions was composed for four channels. The new version, and this is the world premiere of this new version, uses 20 channels. The complex clouds of events are now distributed over many speakers so that the listener can isolate many events through its individual location. Even more the amount of perceived events increases when they are distributed in space. With this phantastic multi-speaker environment the sounds seem to be detached from the speakers. It seems they are flying in the air.

Beside this the channels are not statically patched to a specific speaker. Instead the are continuously moving through the loudspeaker array

Ludger Bruemmer was born in Werne, Germany, in 1958. 1978-1983 studies in Pedagogy at the University of Dortmund, Diploma; 1983-1989 composition studies with Nicolaus A. Huber and Dirk Reith at the Folkwang Hochschule, Essen; 1991-1993 visiting Scholar at the Cen-

ter for Research in Music and Acoustics, Stanford University, USA; 1993-2000 instructor in composition, synthesis and analysis at the Institute for Computer Music and electronic Media (ICEM) Folkwang Hochschule Essen, the Electronic Studio of the Technical University Berlin, Archimedia Kunsthochschule Linz, the Hochschule for Design, Karlsruhe, the Institute for New Music, Bremen and the Institute for Sonology, Den Haag; since 1994 research and composition at the ZKM | Center for Art and Media Technology, Karlsruhe; 1999 director of the year-long audio-visual workshop Genesis at the ZKM, Karlsruhe; 2000-2002 Lecturer at the Darmstadt Spring Seminars. Research fellow at Kingston University; 2002 Professor at the Sonic Art Research Centre, Queens University Belfast; since 2003 director of the ZKM | Institute for Music and Acoustics in Karlsruhe.

*Martin Kaltenbrunner, Marcos Alonso*

**reactTable\*** (ca. 20:00)

The reactTable\*, is a state-of-the-art multi-user electro-acoustic music instrument with a tabletop tangible user interface. Several simultaneous performers share complete control over the instrument by moving physical artefacts on the table surface and constructing different audio topologies in a kind of tangible modular synthesizer or graspable flow-controlled programming language.

The instrument was developed by a team of digital luthiers under the direction of Dr. Sergi Jordà. The “Interactive Sonic Systems” team is working in the Music Technology Group within the Audiovisual Institute at the Universitat Pompeu Fabra in Barcelona Spain. Its main activities concentrate on the design of new musical interfaces, such as tangible music instruments and musical applications for mobile devices.

The reactTable\* intends to be:

- \* collaborative: several performers (locally or remotely)
- \* intuitive: zero manual, zero instructions
- \* sonically challenging and interesting
- \* easily accessible and usable (even for children)
- \* suitable for novices (installations) and advanced electronic musicians (concerts)

The reactTable\* hardware is based on a translucent round table. A video camera situated beneath, continuously analyzes the table surface, tracking the nature, position and orientation of the objects that are distributed on its surface, representing the components of a classic modular synthesizer. These objects are passive without any sensors or actuators, users interact by moving them, changing their position, their orientation or their faces (in the case of volumetric objects). These actions directly control the topological structure and parameters of the sound synthesizer. A projector, also from underneath the table, draws dynamic animations on its surface, providing a visual feedback of the state, the activity and the main characteristics of the sounds produced by the audio synthesizer.

Martin Kaltenbrunner is a researcher and Ph.D. candidate working in the Music Technology Group within the Audiovisual Institute at the Pompeu Fabra University in Barcelona, Spain. His research covers auditory and tangible user interfaces and interactive sonic systems - to-

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pics, which he has been teaching at various european universities. Currently he is mainly working on the reactTable\*, a novel electronic music instrument with a tangible user interface.

Marcos Alonso recently graduated with the highest distinction in computer science at the technology department at the Universitat Pompeu Fabra. Marcos is the team's designer and the man behind the graphics engine of the reactTable\*. His further work includes a plug-in for the integration of pure-data (PD) into a web browser.

## **YUE**

The Yue project started about two years ago in Reggio Emilia, (Italy) and consists of three musicians (Daniele Torelli, Luca Piccinini, Luca Bigliardi) and a video artist (Andrea Bagnacani) who want to use free software only. Our activity is essentially live-oriented, and in the last two years we played in many concerts in every kind of place (all in Italy so it's useless to say the names, they are discos, „outdoor“ Festivals, pubs, etc...) The software parts of our work is realized with free software like Whysynth and Xsynth, samplers like Fluidsynth-DSSI and Specimen, Ardour, many LADSPA effects, „real“ instruments (synths, guitars) Freej and Effectc for the video part. Our music is all selfmand and available under Creative Commoms Attribution-ShareAlike license.

Frank Rübler

## **k.naQs**

“k.naQs” is a study in a minimalistical manner from different point of views:

The sound material consists of cracks - sounds with minimal duration - taken from endless-rill-loops of vinyl-records. Each loop is cutted to the exact length of one turn. The sound engine (written in 'pd') acts as a simulation of different virtual turntables, usable as a live-instrument. The communication level between interpreter and sound engine - the instrument - is limited to a minimal number of available impulses, that are used to control the individual turntable. The possible command messages are 'start', 'stop', 'speed increase' and 'speed decrease'. In addition to real turntables, the right and left audio channel can be controlled separately from each other.

The 'endless-loop' principle is ported to some kind of conductor level with help of the MIDI-loop-sequencer 'seq24'. It provides the control impulses for the virtual turntables in form of loop patterns, with individual time signatures and number of measures, which are - analogous to the crack-loops - endlessly repeated. Therefore the properties and origin of the sound material is used as a (self )defining compositional element.

Minimal changes in speed and the starting/stopping of the endless-crack-loops are resulting in rhythm shifts, creating time signature changes respectively moving and destroying the main focus of the measure.

Frank Rübler, born on the 4th of April 1973 in Duisburg/Germany, studied 1999-2005 electronic composition at the Institute for Computermusic and Electronic Media (ICEM) of the Folkwang-Hochschule Essen/Germany. 1996–2000 studies in education of music with main focus on classical guitar. Since 1995 he contributes guitar-, bass- and electronical sounds to various/own band projects.

## **JackLab**

Sometimes we think we have a name for this project, maybe „Los Hermanos de Don Alfredo“ is a good name, but who cares...we make some „groove salad“, serious pop, avantgarde and soundscapes. Improvised compositions are taking snapshots of the moment. We al-

# Linux Sound Night

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so work with some arrangements, that we will compose online special for this project. The cast of this project are experienced musicians playing over the years in regional projects and bands. We are working live with open SUSE JAD in our musical context, realtime for sound creation and amp simulation. The background of this project is the circumstance that we meet for making music together in the small flat from Sören in the center of Bremen. So we started to find a new way of making music together with a DAW as a central multiinstrument. Michael's effort for an audiolinux let the projekt begin to work with open SUSE JAD instead of Windows / Mac DAWs, as an artistically concept of limitation.

Michael Bohle, \*1964 – Electronics, electric guitar, keyboards and vox.

Sören Heidrich \*1969 – Electric guitar and voice, keyboards

Wilken Bösch \*1967 – Electric bass, keyboards and soundsystem.

The unknown female singer

David Bailey, John Bailey, Daniel James

## **The day before today**

This piece composed by David Bailey, John Bailey and Daniel James and recorded by their Tuesday night jamming band, which goes by the name of "djomp". It was recorded on the same hardware as the other track, but running the AGNULA/ DeMuDi distribution with Fluxbos and Arcour and a 2.4 kernel. Since switching to Ardour we have begun to make use of real-time effects, mostly the swh and tap LADSPA plugins. We also use amsynth and zynaddsubfx is used for a Keyboard overdub, there is a guitar solo and claves overdub, and the rest is played live.

The band lives in Freshwater on the Isle of Wight. John plays the drums and the keyboard, Dave plays lead guitar and Daniel tries to keep up on bass. He also gets to click the mouse a lot. When they finally get around to it, they will release their second CD.

Frank Barknecht

## **Plak**

Frank Barknecht is a writer, software developer and sound/code artist living in Cologne, Germany. Since 2005 he is part of GOTO10, an international collective of media artists, musicians and coders devoted to using and promoting Free Software in their work, which is based in France originally.

His favorite weapon of mass creation is the software "Pure Data" written as open source project by Miller Puckette and many others. He is involved in the "Pd scene" since around 2001, where he is supporting new users through the Pd mailing lists and helps maintain the central code repository.

Frank Barknecht did concerts, talks and workshops in Germany (KHM Cologne, ZKM Karlsruhe, Kunsthochschule Kassel), Austria (IEM Graz) and Netherlands (Montevideo Institute + Waag in Amsterdam, V2 Rotterdam).

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He participated and coorganized the "Pure Data Big Band" in Cologne, a multinational group of almost 20 media artists performing improvised sound and video together in Feb. 2005.

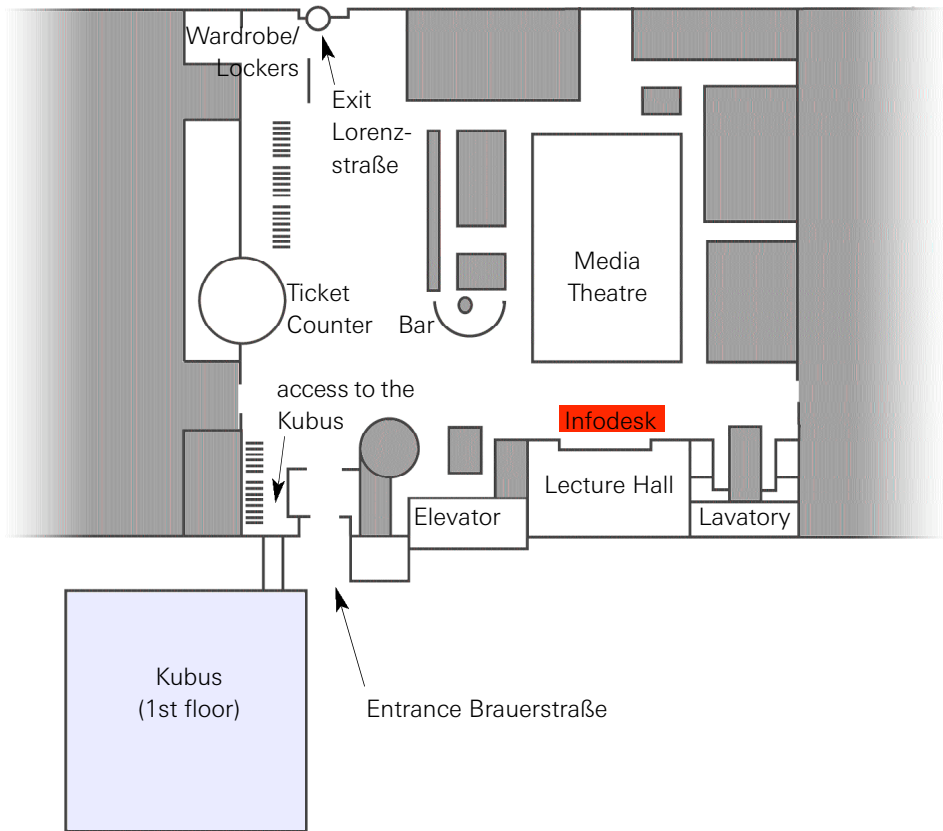
As a writer and journalist, Frank Barknecht is employed as an editor in the website department of the public radio station Deutschlandradio, he occasionally writes for the magazine GEE, Hamburg, and for the german computer magazine c't in Hannover.

His current sound project is again developed using Pure Data and consists of sound and visuals, that both are produced simultaneously by evaluating underlying "models", that are invisible and inaudible in itself. While performing, just the "model" is influenced directly, while the visual and auditory aspects mainly provide feedback to guide the performer's improvisations.

It is hoped, that in this setup the model will create an intimate link between sound and video, so that they become more than the sum of their parts.

The technical requirements are: a table with enough room for one laptop and two similarly sized midi controllers, stereo sound system and a beamer with a VGA connector.

# ZKM\_Ground Floor



Partner der Staatsoper Stuttgart und  
des Zentrums für Kunst und Medien-  
technologie Karlsruhe (ZKM).