

Vol. 17, no. 2. Summer 1997

Appray

Communications of the ICMA

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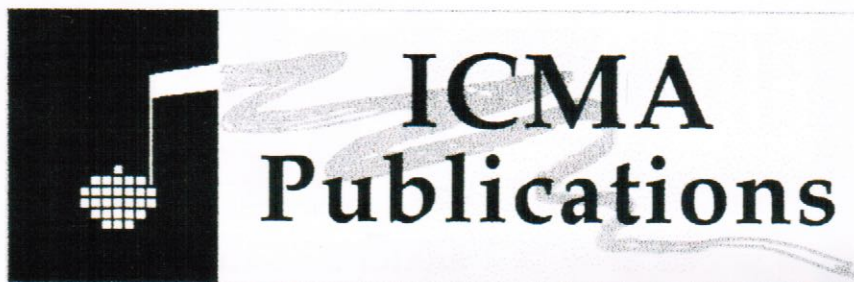
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The International Computer Music Association

announces



Bringing art and science together.

The ICMA announces the formation of a new publication project, *ICMA Publications*. Previous association publications have been limited to ICMC Proceedings and compact disks, technical videos and informational databases. *ICMA Publications* expands this catalog to now include what the ICMA Board and Officers consider to be significant publications no longer available from the mainstream publishing houses. *ICMA Publications* will serve as a facimile publisher of what is considered works of significant historical, referencial or esthetic value to our membership. We proudly announce as our first listing, the now classic . . .

Digital Audio Signal Processing

by John Strawn, Editor

Originally published by A-R Editiona Digital Audio Series, *Digital Audio Signal Processing* remains as classic in the field. The articles in this book were written for both the beginner and the advanced practitioner of digital signal processing, especially as it relates to digital audio. Digital signal processing gives insight into matters such as digitiation and sampling, inherent in the creation of digital audio. Musically useful tools for the manipulation of sound, such as filtering, reverberation, spectral analysis, and cross-synthesis, are anchored in digital signal processing as well.

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- | | |
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| 4. SIGNAL PROCESSING ASPECTS OF COMPUTER MUSIC:
A SURVEY | JAMES R. MOORER |
| 5. AN INTRODUCTION TO THE PHASE VOCODER | JOHN W. GORDON
AND JOHN STRAWN |

283 pages

These volumes are not the original printings but rather kromecoat cover, spiral-bound, high quality xerox reproductions on 20 lb. stock. As an introductory offer *Digital Audio Signal Processsing* is available to ICMA Members only for \$30.00. Please refer to the ICMA Order Form at the back of this iss ue.

ARRAY
Summer 1997
Volume 17
Issue No. 2

ARRAY is the triannual
publication of the International
Computer Music Association.

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Publication of this ARRAY was made possible, in part, by a grant from the National Endowment for the Arts, USA.

Announcements

ONLINE ARRAY

The ICMA board recently voted that the online version of "Array" will be made available as soon as the html is ready. This service will enable members to read ICMA news as soon as possible, and still retain the benefit of a hard-copy issue of the newsletter.

Katharine Norman, Editor ARRAY

ICMA 1998 CALL FOR SUBMISSIONS

1998 International Computer Music
Conference (ICMC98)
October 1-6, 1998
University of Michigan
Ann Arbor, MI
USA

CALL FOR SUBMISSIONS

PAPERS, POSTERS, DEMOS, and PRESENTATIONS ICMC98 seeks papers, demos, presentations and posters in all aspects of computer music. All submissions are subject to peer review according to the following categories: Long Paper - 8 pages published in the Proceedings and 30 minutes presentation time Short Paper - 4 pages published in the Proceedings and 20 minutes presentation time Demo/Presentation - 4 pages published in the Proceedings and 30 minutes presentation time Poster - 4 pages published in the Proceedings and 20 minutes presentation time.

For submission guidelines, please see the ICMC98 WWW site after September 1, 1997 or the ICMC98 Brochure (initially available at ICMC97).

Note:

All paper, poster, demo and presentation proposals should be submitted by e-mail to: icmc98-papers@umich.edu no later than December 1, 1997.

Notification of papers, posters, demos and presentations acceptance/rejection is May 1, 1998.

MUSIC AND INSTALLATIONS

ICMC98 is particularly interested in electro-acoustic music that includes some aspect of human real-time performance.

University of Michigan Ensembles participating in ICMC98 include the Symphonic Band (woodwinds, brass and percussion), the Contemporary Directions Ensemble (ensemble committed to the performance of new works), Percussion Ensemble (electronic and acoustic percussion), the Digital Music Ensemble (electronic and acoustic instruments) and the University Dancers. Since the University of Michigan School of Music offers studio instruction in virtually all traditional Western instruments, small ensembles can easily be created as required

NOTICE TO CONTRIBUTORS

The deadline for submissions for the next issue of ARRAY, Vol. 17, No. 3, is **November 15, 1997**. All submissions to ARRAY must be in machine-readable form. You must submit items using electronic mail or on a floppy disk (either Macintosh or PC). If you submit anything solely as hard copy, it will not be considered for publication in ARRAY. If you send a submission on floppy disk, please send two copies: one as a plain ASCII text-only file, and the other copy as the file that your word processor uses.

Please do not use any formatting other than italics and bold face. If you wish to include graphics with your submission, please do so in TIF or EPS format only. It is helpful if you can include a hard copy as well. If you would like your disk returned, please include a self-addressed, stamped return envelope.

Send ARRAY submissions to :
ARRAY/Katharine Norman
18 Northcote Road
London E17 7DU
U.K.
e-mail: kate@novamara.demon.co.uk

Email submissions and inquiries will receive the quickest response.

Announcements, cont.

by the ICMC98 program.

A number of architecturally-interesting spaces are available for installations. These spaces are in close proximity to ICMC98 sessions. For a submission form, please see the ICMC98 WWW site after September 1, 1997 or the ICMC98 Brochure (initially available at ICMC97).

Submission Fees:

ICMA members may submit up to two works (installations and/or music) at no charge. Each additional submission must be accompanied by a \$20.00 submission fee. Each work submitted by a non-ICMA member must be accompanied by a \$20.00 submission fee.

Note:

Musical scores must be professionally prepared to receive a performance.

All fees are in US dollars.

All music and installations must be POST-MARKED by December 1, 1997. Mail to: ICMC98 - Conference Management Services:

600 E. Madison, Room G-121
University of Michigan
Ann Arbor, MI
48109-1372
USA

Notification of music/installation acceptance/rejection is March 15, 1998.

ABOUT THE UNIVERSITY OF MICHIGAN

The University of Michigan features an intellectually and artistically rich environment indicative of a major American public research institution. Founded in 1837, the University is consistently ranked among the top ten universities in the United States, offering a breadth of experiences for its 35,000 undergraduate and graduate students. Campus tours are scheduled throughout ICMC98 so delegates may visit the research facilities such as the Electronic Music Studios, the Virtual Reality Lab and the Visualization Lab. For more information about the University of Michigan, point your WWW browser to:

<http://www.umich.edu>.

The School of Music is consistently ranked among the top half-dozen music schools in the United States. The nearly 800 students enrolled at the School pursue undergraduate and graduate studies in music, theatre and dance. The caliber of performer attracted to the School gives rise to impeccable ensembles including the Symphonic Band, the Creative Arts Orchestra, the Contemporary Directions Ensemble, Percussion Ensembles and the Digital Music Ensemble. For more information about the School of Music, point your WWW browser to: <http://www.music.umich.edu>.

CONTACT INFORMATION:

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Address: ICMC98 - Conference Management Services
600 E. Madison, , Room G-121
University of Michigan
Ann Arbor, MI
48109-1372
USA
Conference Chair: Mary Simoni
<msimoni@umich.edu>

INFO ON STOCKHOLM ELECTRONIC MUSIC FESTIVAL

Stockholm Electronic Music Festival, 5-8 Nov 1997, and
Stockholm Electronic Arts Award
see <http://www.algonet.se/~icem/stemf.html>

GrainMaker 2.0, a soundfile granulation Csound score generator programmed in MAX, is now available at the following ftp sites:

<ftp://ftp.ircam.fr/pub/incoming/max-patches/>
<ftp://serial.music.uiowa.edu/pub/upload/>

GrainMaker 2.0 includes the following new features:

- 1) can transpose soundfiles (including random transposition per grain)
- 2) writes score files directly to the hard drive (no more crashing with the text objects)
- 3) is a stand-alone app (FAT—runs on 68k or PPC) a) GrainMaker 2.0 with picts shows

grain envelopes as they are selected b) GrainMaker 2.0 (no picts) requires less memory

Jon Christopher Nelson, Director
CEMI (Center for Experimental Music and Intermedia)
jnelson@sndart.cemi.unt.edu
<http://www.music.unt.edu/comp/jnelson.htm>

Version 1.13 of Multi!Wav Adapter Device Driver for NeXTSTEP Release 3.2 and 3.3 for Intel Processors and OPENSTEP 4.0 /Mach

The Harvard Computer Music Center, Rob Poor, and Tomas Hurka announce the first NeXTStep for Intel driver for a professional audio card. Thanks to the amazing work of Tomas Hurka, we have completed a driver for the AdB Digital Multiwav Pro and Multiwav Pro-18 cards. This is the FIRST driver for a digital i/o card for NeXTStep Intel.

OVERVIEW:

Multi!Wav Adapter device driver lets you take advantage of the following adapters:
Manufacturer Adapter PC Bus
AdB Corp. Multi!Wav Digital PROISA
AdB Corp. Multi!Wav Digital PRO18 ISA

These Multi!Wav ISA cards provide AES/EBU, SPDIF, and TOSLINK input/output to your NeXTStep Intel machine. The Pro-18 card adds an 18 bit digital to analog converter for monitoring. For more information about AdB sound cards see the AdB [www home page at http://www.adbdigital.com](http://www.adbdigital.com).

Driver supports 32000,44100 and 48000 Hz sampling rates, 16 bit linear sampling in mono or stereo format. The driver makes the card work like a standard audio card, so special software is not needed for digital transfers, though I recommend Bernhard Scholz's excellent SASound.app for recording. The driver is robust, and provides much better playback than what you might be used to from the Microsoft Sound System, SoundBlaster, or Pro Audio Spectrum. Harvard Computer Music Center are currently using the cards to do direct to DAT transfers, and with Lexicon MXP1s for digital reverberation without leaving the digital realm. They're proven to be a remarkable improvement over our Microsoft Sound System Cards.

COPYING:

The Multi!Wav adapter device driver is shareware. You can freely distribute without changing or removing any parts of the package. If you found the driver reliable, please, register the driver. For more details see document Registration.rtf inside driver package. Release 1.13 notes:

1. This a first public release of the driver.
2. Only Multi!Wav Digital PRO with XLINK XC4003A is supported. Other two versions (XC4004A and XC4003E) of XLINK will be supported on request.
3. Driver does not use IRQ since Multi!Wav card cannot generate one. The result is this log message when the driver is loaded by Mach OS: "MultiWav at dma channels 6 and 7 irq -268415659" This does no harm. Ignore the message.

AVAILABILITY:

The driver has been uploaded to [ftp.next.peak.org](ftp://ftp.next.peak.org) and placed in the /pub/next/submissions directory. Driver should be moved to the /pub/next/drivers/sound directory.

The appropriate files are:

<ftp://ftp.next.peak.org/pub/next/drivers/sound/MultiWav.1.13.I.b.README>
<ftp://ftp.next.peak.org/pub/next/drivers/sound/MultiWav.1.13.I.b.tar.gz>

For more information on the driver, please contact us at:

Tomas Hurka
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Czech Republic, Europe
Email: tom@hukatronic.cz

Sean Varah
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Harvard University
Music Building, North Yard
Cambridge, MA 02138
U.S.A.
Email: multiwav@mario.harvard.edu

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SOME NEWS FROM EASTERN EUROPE - THE LIFTING OF THE IRON CURTAIN: POLAND AND THE CZECH REPUBLIC

By
Libor Zajicek
zajicek@h.amu.cz

This time I have to begin with very sad
ICMA ARRAY V17, N2

news. SEAH's president, Karel Odstrcil (1930-1997), passed away on 21 May. One of the founding members of the Experimental Studio at the Czech Radio in Plzen, composer, and great proponent of Czech electroacoustic music, Karel (Charlie) will be greatly missed! As a consequence of Charlie's death, some of the planned events for this year are somewhat in doubt. Those include the release of SEAH's second CD, a Premie concert of new Czech electroacoustic music in the autumn, and most importantly, a concert commemorating the 30th anniversary of the Experimental Studio in Plzen. I will push hard for these events to materialize. Since the last issue of ARRAY I have also contacted many people from Eastern Europe to provide me with some news, but only Prof. Krzysztof Szlifirski <kriss@plearn.edu.pl> has been kind enough to reply. At the beginning of September, there will be a course of electroacoustic music for composers in Kazimierz. As part of the Warsaw Autumn festival (20-28 September) there will be three concerts of electroacoustic music. Finally, the Polish Radio will have a special concert commemorating the 40th anniversary of its Experimental Studio on 18 October. More news next time!

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TIME DOMAIN FILTER SOFTWARE

I'm proud to announce my first software release, Argeiphontes Lyre! Argeiphontes Lyre is a set of time domain filters which includes Dynamic FM Synthesis, Evisceration Reanimation, Time Domain Mutation (based on the work of Larry Polansky), Algorithmic Processing and various mad experiments in interface design. ALis my 'Major Graduate Project' at CalArts and represents numerous beatings from the great Tom Erbe (of SoundHack fame <http://shoko.calarts.edu/~tre/SndHckDoc>). Argeiphontes Lyre can be found at <http://shoko.calarts.edu/~akira/lyre.html> or <ftp://shoko.calarts.edu/pub/akira/ArgeiphontesLyre.sit.hqx>

So stop round and give it a try. I'd love to hear any questions, comments or !@#\$.
=====

Akira Rabelais
akira@shoko.calarts.edu
<http://music.calarts.edu/~akira>

=====

New mailing list at calarts: music-dsp

The focus of this list will be sharing music/sound related dsp (digital signal processing) strategies, techniques, code, etc. It may be of interest to anyone working with sound and computers, especially those involved in developing their own software or building custom hardware. possible topics could include: writing sound synthesis software for the mac/pc, writing assembly language dsp code for the motorola 56k chip set, hacking the ROMs in your favorite synth, building stand-alone dsp boxes, etc.

There is a tremendous amount of dsp work going on in arts communities around the world, and this list is an attempt to provide some sort of centralized information exchange between those communities.

to join the list send mail to:
listproc@shoko.calarts.edu
with this in the body of the message:
subscribe music-dsp your name

for more info you can email me at:
glmrboy@shoko.calarts.edu

douglas irving repetto (a.k.a. irving bellemead)

email: glmrboy@music.calarts.edu
<http://shoko.calarts.edu/~glmrboy>

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NEW WEB SITE FOR SWISS CENTER FOR COMPUTER MUSIC

SCCM is pleased to announce the opening of its Web site at:

<http://www.computermusic.ch>

The Swiss Center for Computer Music has now established a World-Wide Web site which gives you information

- about the Center,
- about productions which were done at or in association with the Center,
- about publications from the Center
- and about the upcoming concerts.

The server also includes an archive with articles, csound-instruments, patches and documents.

Gary Berger
Swiss Center for Computer Music

=====

Texas Computer Musician's Network (TCMN) would like to announce its newly-elected officers for the 1997-1998 year:

President - Elaine Lillios
Vice President for Membership - Christo-

Announcements, cont.

pher Morgan
Secretary - Richard Power
Treasurer - Steve Makela
Event Coordinator North - Steve Willis
Event Coordinator South - David Hainsworth
Educational Liason - Laura Romberg
Webmaster - Michael Thompson

Texas Computer Musician's Network (TCMN) is an organization dedicated to the public promotion and artistic advancement of electroacoustic art music within the State of Texas. To this end, TCMN presents concerts, lectures, galleries and other electroacoustic and multi-media events at various venues throughout Texas and Oklahoma. Please visit our website at: <http://people.unt.edu/~mat0001/newtcmn.html> or contact us at: tcmn@sndart.cemi.unt.edu

TCMN is currently scheduling events for the coming academic year. If you have a venue in Texas, Oklahoma or another southern state and would like to sponsor a TCMN event, please contact us!

List of papers selected for the Fourth Brazilian Symposium on Computer Music

(Brasilia, August 4-8)

17 Selected Articles

AI AND MUSIC: COMPUTER AND BRAIN
Mladen Milicevic

A CELULAR AUTOMATA BASED MUSIC ALGORITHM
Kenny McAlpine

USING SPECTRAL MODELING AS AN INTUITIVE APPROACH FOR COMPOSITION AMONG COLOMBIAN COMPOSERS
Juan Reyes

PROJETO E IMPLEMENTAO DE UM SISTEM PROBABILISTICO VOLTADO CRIAO MUSICAL
Vladmir Agostini Cerqueira
Gilberto Carvalho

OBJECT-ORIENTED MUSIC ANALYSIS
Didier Guigue

UTILIZAO DE ESTRUTURAS DE DADOS ESPACIAIS PARA REPRESENTAO DE RECURSOS COMPOSICIONAIS EM MSICA
Ana Miccolis

REPRESENTAO E RECUPERAÇÃO BASEADA EM CONTEUDO DE PARTITURAS MUSICAIS EM BASES DE DADOS ORIENTADAS A OBJETOS
Marisa Beck Figueiredo

TIME-FREQUENCY DISTRIBUTION FOR TIMBRE MORPHING; THE WIGNER DISTRIBUTION VERSUS THE STFT
Ciaran Hope

SINTESE ADITIVA E WAVESHAPING PELO MTODO POLINOMIAL
Edwin Loboschi
C.J.B. Pagan
Yaro Burian Jr.
Paulo S. dos Santos

WAV2MID - CONVERSOR DE MELODIAS DO FORMATO WAVE PARA O FORMATO MIDI
Mrcio Brando

AUDIO WORKSHOP, A PROGRAM FOR AUDIO SYNTHESIS AND PROCESSING
Victor Lazzarini

neCSO - INTERFACE PARA UM SISTEMA DE SINTESE E PROCESSAMENTO DE SOM (CSound)
Mauricio Alves Loureiro

NOVAS INTERFACES E A MSICA ELETROACSTICA
Rodolfo Caesar

INTERACTIVE CONTROL OF SINGING VOICE PRODUCED WITH THE CHANT SYNTHESIZER AND THE IRCAM SIM: "LE MESSENGER"
Laurent Pottier

NeXTSTEP GRAPHICAL INTERFACE TO CONTROL SPATIALIZATION INSTRUMENTS
Caroline Traube

THE ELECTROACOUSTIC PRODUCTION OF THE L.M.E. OF THE NATIONAL UNIVERSITY OF CORDOBA
Martin Alejandro Fumarola

O STUDIO PANAROMA DE MSICA ELETROACSTICA DA UNESP/FASM
Flo Menezes

For more information, visit the Web site:
In ENGLISH
Full applet english version:
<http://www.cic.unb.br/sbc97i/sbc97i.html>
Simplified HTML english version:
<http://www.cic.unb.br/sbc97i/html/sbcmi.html>

In PORTUGUESE
Full applet portuguese version:
<http://www.cic.unb.br/sbc97/sbc97.html>
Simplified HTML portuguese version:
<http://www.cic.unb.br/sbc97/html/sbcm.html>

SHEFFIELD UNIVERSITY (UK) SOUND STUDIO RESIDENCIES

The following composers have been selected for residencies at the University of Sheffield:

Francesco Giomi (Italy)
Matthew Ostrowski (Austria)
Jocelyn Robert (France)
Mark Hadley (UK)
John Wynne (UK)

Composers will work on individual projects, to be released on a SUSS CD in 1998/9. For information on future residencies please contact Pete.Fletcher@sheffield.ac.uk

BROADCAST OPPORTUNITY

I host a 3 and 1/2 hour radio program in Chicago called "something else". The show is on WLWU 88.7 fm (Loyola University) from 10:30 until 2 am Sundays. I would like to 1) encourage people who can to listen and 2) ask anyone who's interested in having their work aired on the program to get in contact with me. Playlist are sent out via e-mail weekly, if you'd like to receive the latest one, please write me.

Philip von Zweck (vonzweck@ripco.com)

NEWS FROM CARNEGIE MELLON
Progress on Auraby Roger B. Dannenberg
ICMA ARRAY V17, N2

My students and I have been working on a new software system to assist in the development of real-time, interactive software. The system inherits a lot of ideas from the CMU MIDI Toolkit, but the new system is designed to support MIDI, Audio processing, computer graphics, and graphical user interfaces. I would like to describe the current state of the system and invite others to participate in further development.

The system includes two layers, W and Aura. The W layer provides objects, messages, and scheduling. W was described in the Proceedings of the 1995 ICMC and the paper is available at <http://www.cs.cmu.edu/~rbd/papers/wpaper.ps.Z>. The basic idea of W is that computation is performed within objects, and groups of objects are served by a shared thread. Typically, time-critical objects are served by a high-priority thread, and not-so-time-critical objects are served by a lower-priority thread. There can be any number of threads and groups of objects. We typically use one thread for graphics and animation, one for MIDI computation, and one for audio computation.

With objects running in different threads with different priorities, managing concurrency is critical. W objects communicate using asynchronous messages delivered over software connections, so configuring W objects is something like connecting a set of MIDI modules. Typically, a message sets an attribute to a value, and an object's external interface is simply a set of attributes. Messages are always delivered and processed by the object's own thread, so the programmer never needs to worry about concurrent access to variables within an object. Message delivery is very fast: asynchronous message delivery across threads takes less than 5 microseconds on a 150MHz Pentium.

The second layer, called Aura, is a sound processing and synthesis layer. Aura uses W objects to implement "instruments" which can be configured dynamically. Aura is described further in the 1996 ICMC proceedings and at <http://www.cs.cmu.edu/~rbd/papers/aura.ps.Z>.

Altogether, W and Aura are similar in many respects to Max and Sonnet (<http://www.research.ibm.com/music/music5.html>). Aura is intended to be more dynamic and reconfigurable than Max, but Aura does not emphasize visual program-

ming, and most programming is expected to occur in C++ rather than by interconnecting modules.

So far, I have completed two interactive compositions for trumpet, MIDI synthesis, and computer animation using W, and the system has been extremely useful. Objects can be examined or modified during execution using a simple command-line interface, and the ease with which objects can be interconnected is a great aid to development and debugging. Aura is less developed but promising. We have built simple MIDI-controlled instruments, objects that play sounds from disk, and more is in progress.

We would welcome anyone to join our development efforts. W and Aura are currently implemented in Microsoft C++ under Windows NT, and the system is free for non-commercial use. Some future directions for development are: ports to other systems, porting Midi File and Adagio score representations from the CMU MIDI Toolkit to W, development of unit-generators and instruments or their adaptation from other systems, graphical interface enhancements, and extensions deal with multiple machines. If you are interested, contact rbd@cs.cmu.edu.

Roger Dannenberg

MASTERS DEGREE AT POMPEU FABRA UNIVERSITY

Master in Digital Arts (specialties in Music and Image) Academic Year 1997 - 98

The Audiovisual University Institute (IUA) of Pompeu Fabra University organizes, in conjunction with the Phonos Foundation, the Master in Digital Arts, which covers the latest innovations in the field of visual and musical arts by digital means and presents them in an integrated way, featuring both theory and practice. The degree is awarded by Pompeu Fabra University, homologated in Europe as a European Media Master (EMMA) by a group of universities coordinated by the C.I.T.E. (Centre for International Technology and Education) and supported by the European Union MEDIA Programme.

The course has a duration of one year, and is recommended to be studied on a full-time basis. Its general aim is to familiarize students with digital technologies for audiovisual and music production. It consists of a

common core and two specialities: Image and Music.

Objectives:

1. To provide an integrated course in audiovisuals and the use of digital technology linked to two specialities: Image and Music.
2. To provide the necessary academic and practical knowledge to carry out innovative productions in the audiovisual field taking into account the increasing scope and the potential of the digital medium.
3. To provide instrumental studies on image, sound and interactive multimedia (both compact and network-based) of interest to those involved in audiovisual and music production.
4. To provide an overview of contemporary aesthetic trends and their influence on artistic production by computer.
5. To carry out a series of practical assignments and a creative or research project.
6. To exchange knowledge and experience with students of the other European Media Masters.

Directors:

Xavier Berenguer (Director of the IUA and professor of the Pompeu Fabra University)
Xavier Serra (Executive Director of the Phonos Foundation and professor of the Pompeu Fabra University)

Course structure:

The course consists of a block of common core subjects occupying a total of 135 hours and two blocks of subjects corresponding to the two specialities Image and Music, of 225 hours each. There is also guided practical work amounting to 300 hours. Furthermore, students are required to carry out a Project and attend a European Forum.

Dates and timetable:

The course will begin on 29th September 1997 and finish on 15th June 1998. The production or research Project may be submitted up to 31st December 1998.

Degree awarded:

Students who attend the classes, pass the core and the specialty subjects, attend the Forum and present the Project are entitled to the Master in Digital Arts (specializing in Image or Music) awarded by Pompeu

Announcements, cont.

Fabra University, and the European Media Master (EMMA), title homologated by the members of the C.I.T.E. (Centre for International Technology and Education).

Admission requirements:

In order to be accepted for the course, applicants must have a bachelor's degree in: Engineering, Audiovisual Communication, Computer Science, or Conservatory Studies (if homologated with a bachelor's degree) or other qualifications of the same university level related to these subjects.

Exceptionally, a master's degree may be awarded to students with a diploma or a short degree in Engineering or Architecture in the areas mentioned.

The course is also open to candidates who do not fulfil the above requirements but who have a recognized level in music or in the audiovisual field. Their level will be assessed by the directors. Such cases will be acknowledged at the end of the course with a certificate of attendance and progress rather than the master's degree.

Application and enrollment:

Application: up to 15th June 1997

Candidates must submit a curriculum vitae, a certificate of their academic records and an authenticated copy of their degree or corresponding receipt.

Knowledge of computers will be taken into consideration, as will full-time dedication to the course.

Enrollment: from 15th to 30th July 1997
Enrollment fee: 750.000 Pta.

Information:

Audiovisual Institute
Pompeu Fabra University
Rambla 31, 08002 Barcelona
Spain
ph: 34-3-542 2200
fax: 34-3-542 2202
email: clotet@iaa.upf.es
http://www.iaa.upf.es

NEW AI COURSE AT UNIVERSITY OF GLASGOW

The University of Glasgow Creates a Pioneering Course on Artificial Intelligence and Music"

Artificial Intelligence and Music is a new course unit of the Dept of Music starting next academic year.

Of the many disciplines engaged in gaining a better understanding of the nature of intelligence, Artificial Intelligence (AI) is one of the few that has a particular interest in testing its hypotheses in practical day-to-day situations. The obvious practical benefit of this aspect of AI is the development and further sophistication of technology to make machines behave intelligently; for example, today's computers have an enormously diverse role, and with the aid of AI, can play chess, diagnose certain types of diseases and compose music.

The creation of music is undoubtedly one of the most intriguing activities of human intelligence. By studying models of this activity, researchers have attempted to decipher the inner mysteries of the relationship between music and the human mind.

The University of Glasgow will be pioneers, as the first University to offer this subject at undergraduate level, with no equivalent elsewhere in Europe. The rationale for this course is to prepare students for research in AI and Music; a subject that has recently been established as an important area of research throughout the world. The course will aim to introduce students to the fundamentals of AI and its applications for music. On completion of the course, students will be familiar with the basic principles of AI and with current applications for music. Students will also be able to identify musical tasks which could be aided by AI and indeed be able to write AI programs in Prolog (the programming language commonly used in AI research).

The course convener, Dr Eduardo Miranda, also announces that a clone of this new course is being prepared for a Brazilian university.

Dr Eduardo Miranda
University of Glasgow
Centre for Music Technology
eduardo@music.gla.ac.uk

SEAMUS (The Society for Electro-Acoustic Music in the United States) will hold its national meeting April 16-18, 1998 at Dartmouth College in Hanover, New Hampshire.

Please contact Dee Copley for further information concerning the submission of works and paper proposals (dee.copley@dartmouth.edu). Jon Appleton is in charge of the conference and promises that it will be significantly different from the SEAMUS national meeting held at Dartmouth in 1987. Being sought are compositions involving live performance with synthesizers or with alternate controllers, collaborative efforts with circus performers, works which are inspired by classics of electro-acoustic music composed before 1960, and text-sound composition. Papers dealing with historical subjects will be especially welcome as will all contributions by members under thirty years of age.

BOOKS...

Music and Schema Theory. Cognitive Foundations of Systematic Musicology
by Marc Leman

University of Ghent, IPEM (Institute for Psychoacoustics and Electronic Music)
Blandijnberg 2, B-9000 Ghent, Belgium.

Editor: Springer (Springer Series in Information Sciences)
Springer-Verlag, Tiergartenstrasse 17, D-69121 Heidelberg, Germany.

To begin, some words by the author of the book: "The aim is to give musicologists, students, researchers, and interested laypersons a profound introduction to some fundamental issues in the cognitive foundations of systematic musicology. This is done by means of a case study in tone center perception but the results are extrapolated towards other modalities of music cognition, such as rhythm and timbre perception."

Table of contents of "Music and Schema Theory":

1. Introduction
2. Tone Semantics
3. Pitch as an Emerging Percept
4. Defining a Framework
5. Auditory Models of Pitch Perception
6. Schema and Learning

7. Learning Images-out-of-Time
 8. Learning Images-in-Time
 9. Schema and Control
 10. Evaluation of the Tone Center Recognition Model
 11. Rhythm and Timbre Imagery
 12. Epistemological Foundations
 13. Cognitive Foundations of Systematic Musicology
- Appendix A. Orchestra Score in Csound
 Appendix B. Physiological Foundations of the Auditory Periphery
 Appendix C. Normalization and Similarity Measures
 References

This book provides a foundation for the understanding of the emergence and functionality of schemata by means of computer-based simulations of tone center perception. It is about how memory structure self-organize and how they use contextual information to guide perception."

First chapters are devoted to the problem of tone semantics from a historical point of view, main achievements of recent research in music perception, the decline of traditional phenomenological approach to pitch perception and new ideas on this field. Later, a framework for a computer model of music perception, an introduction to auditory models and pitch perception, as well as basic concepts on self-organization, including learning and association, are presented. Then, after a model of learning by self-organization is exposed, and long-term learning is discussed, a model for tone center recognition and interpretation is introduced, and tested as a tool for analysis in musicology. The ideas are also extended to the domain of rhythm and timbre perception, and relate the model to neurophysiological foundations, theories of meaning formation, and historical developments in musicology. A Csound setup for generating Shepard tones is included on appendix A. And also an introduction to the physiological foundations of the auditory periphery on appendix B. An interesting and extended list of references is given for each chapter.

One last quote: "This book is about schema theory, about how memory structures self-organize and how they use contextual information to guide perception. The schema concepts has origins in philosophy, neurology and psychology, and is now generally accepted as a fundamental cornerstone in AI (Artificial Intelligence), cognitive sci-

ence, and brain research."
 "Music and Schema Theory" by Marc Leman, edited by Springer (ISBN 3-540-60021-3).

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CONSONANCIA Y DISONANCIA MUSICAL

After a first edition in 1993, a second revised edition of the book *Consonancia y Disonancia Musical* ("Musical Consonance and Dissonance") by Saul Gaona was published on 1996 by Juventudes Musicales del Paraguay (Casilla de Correo 3098 - Asuncin - Paraguay).

While chapter 1 presents a summary of researches on the consonance-dissonance field (Pythagoras, Zarlino, Kepler, Benedetti, Galilei, Descartes, Stevin and Huygens, ...), chapter 2 is a summary of basic concepts on acoustics and psychoacoustics applied to music. Chapter 3 exposes a new theory about the relation of consonance and dissonance, trying with it to help the understanding of sound perception and the evolution of musical history.

The author, engineer Saul Gaona, can be contacted through the 'Orquesta Sinfonica de la Ciudad de Asuncion' address: OSCA - Teatro Municipal - Pte. Franco y Chile - Asuncion - Paraguay.

(reported by Ricardo Dal Farra)

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TWO EA/CM RADIO SERIES IN BUENOS AIRES

Believe it or not, there are now two radio series devoted to the electroacoustic and computer music field in Buenos Aires, Argentina.

To the traditional radio series "Musica y Tecnologia" (broadcasted by the National Radio of Argentina) where more than 500 works by composers from all over the world have been airplayed since 1992, now listeners from Argentina can tune also to "Electromusica" (on the Municipal Radio of Buenos Aires) every Tuesday night.

First compositions broadcasted on Electromusica are: *Solo Saxo Baritono* and *7 Pos-Tales* by Claudio Alsuyet (Argentina), *Mambo a la Braque* by Javier Alvarez (Mexico), *Echoes of Brazil* by Joel Chadabe (U.S.A.), *Go* by Alejandro Viao (Argentina), *Los Peces* by Juan Amenabar (Chile),

Pacific Rimbombo by Jon Appleton (U.S.A.), *Etude aux chemins de fer* by Pierre Schaeffer (France), *Del Otro Lado del Silencio* by Mario Marcelo Mary (Argentina), *Four Voice Canon No. 3* by Larry Polansky (U.S.A.), *Obertura II, Rituales I* and *Musica entre musicas/2* by Enrique Gerardi (Argentina), *Pericon* by Conrado Silva (Uruguay/Brazil), *La Cumbia del Loro, Chanchito Mix, No me perdonan* and *Es la Historia* by Alonso Toro (Venezuela), */cartas/rs.95.car* by Aluizio Arcela (Brazil), *Symphonie pour un homme soul* by Pierre Schaeffer and Pierre Henry (France), and *Sleeping Beauty* by Allen Strange (U.S.A.).

Composers, performers and institutions that wish to participate, please send recordings on CD or DAT tapes using 'air-mail' post ('registered' is safest / NEVER use 'air freight') to:

Ricardo Dal Farra
 Electromusica/Radio Municipal de Buenos Aires
 (or Musica y Tecnologia / Radio Nacional de Argentina)
 Azcuenaga 2764
 (1640) Martinez
 Buenos Aires
 ARGENTINA
 Phone: (54-1) 553-3015
 Fax: (54-1) 827-0640
 Email: dalfarra@clacso.edu.ar

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CONCERT REPORT (MEXICO)

The XIX Foro Internacional de Musica Nueva Manuel Enriquez. (XIX International Forum of new music Manuel Enriquez) was held in Mexico City, from 23-31st May 1997.

Electroacoustic composer Roberto Morales was responsible for a one concert program of electroacoustic music held the 31st of May. Here is the program:

Manuel Enriquez (Mexico)
Movil II (1972)
 For Violin and tape

Antonio Fernandez Ros (Mexico)
Con Jicamo (1993)
 For tape

Cort Lippe (USA)
Music for clarinet bass and tape (1986)

Abel Perez Piton, bass clarinet

Announcements, cont.

Manuel Rocha Iturbide (Mexico)
Moin Mor (1995) for tape

Alejandro Vinao
Phrase and Fiction (1995)
For string quartet and tape
String Quarte of Bellas Artes

We hope to have more than one program of electroacoustic music in this Forum next year.

ANNOUNCEMENT OF NEW CD RELEASE

I am pleased to announced the release of a double CD featuring a reprint of the long out of print, and now classic, Vancouver Soundscape recordings from 1973, plus a second CD featuring the results of Soundscape Vancouver '96, a project undertaken last year to work with the new digital recordings of Vancouver's sound environment. This includes soundscape compositions by Darren Copeland, Claude Schryer and Barry Truax from Canada, and Sabine Beitsameter and Hans Ulrich Werner from Germany. In addition, the CD includes a documentary on the changing soundscape of Vancouver narrated by Barry Truax and Hildegard Westerkamp.

This project and publication was made possible through the generous support of the Goethe Institut, Vancouver, along with the World Soundscape Project. It was launched at a reception at the Goethe Institut on June 5 in honour of R. Murray Schafer who had earlier that day received an honorary Doctorate from Simon Fraser University where he initiated the World Soundscape Project in the early 1970s.

The double CD "Vancouver Soundscape 1973/Soundscape Vancouver 1996" is available for the postpaid price of Can \$34/ US \$25 from Cambridge Street Publishing, 4346 Cambridge St., Burnaby, BC Canada V5C 1H4. This publication is being offered by CSP on a non-profit basis with any net proceeds being used to further the work of the World Soundscape Project.

Barry Truax (truax@sfu.ca)

NEW BOOKS FROM SWETS AND

ZEITLINGER

Announcing a new book in the Studies of New Music Research series

Musical Signal Processing

Editors: Curtis Roads, Stephen Pope, Aldo Piccialli(+), and Giovanni De Poli

Compiled by an international array of musical and technical specialists, *Musical Signal Processing* opens the door to the most important topics in musical signal processing today. Beginning with basic concepts, and leading to advanced applications, it covers such essential areas as sound synthesis (including detailed studies of physical modelling and granular synthesis), control signal synthesis, sound transformation (including convolution), analysis/resynthesis (phase vocoder, wavelets, analysis by chaotic functions), object-oriented and artificial intelligence representations, musical interfaces, and the integration of signal processing techniques in concert performance.

Prepared over a period of four years, *Musical Signal Processing* is designed to be adopted in courses of musical sound synthesis and sound processing, in research centres, conservatories, and university departments of music, acoustics, computer science, and engineering. The audience includes electronic and computer musicians, engineers, acousticians, and instrument designers. The chapters in *Musical Signal Processing* have been written according to a two-part structure: the first half tutorial, the second half advanced. Thus any chapter should be accessible to students of the field.

Table of Contents:

Part I Foundations of musical signal processing

Overview: C. Roads

- 1) Musical signal synthesis G. Borin, G. De Poli, and A. Sarti
- 2) Introducing the phase vocoder M.-H. Serra
- 3) Musical signal modelling with sinusoids plus noise X. Serra

Part II Innovations in musical signal processing

Overview: G. De Poli

- 4) Wavelet representations of musical signals G.-P. Evangelista
- 5) Granular synthesis of musical sounds S.

Cavaliere, and A. Piccialli

- 6) Music signal analysis with chaos A. Bernardi, G.-P. Bugna, and G. De Poli
- 7) Acoustic modelling using digital waveguides J.O. Smith III

Part III Musical signal macrostructures
Overview: S.T. Pope

- 8) Programming language design for musical signal processing R. Dannenberg, P. Desain, and H. Honing
- 9) Musical object representation S.T. Pope
- 10) Artificial-intelligence-based music signal applications A. Camurri, and M. Leman - a hybrid approach

Part IV Composition and musical signal processing
Overview: C. Roads

- 11) Notations and interfaces for musical signal processing G. Sica
- 12) Sound transformation by convolution C. Roads
- 13) Musical interpretation and signal processing A. Vidolin

Order Information:

ISBN (Bound): 90 265 1482 4 - Price US\$ 99.00 / Dfl. 178,00 (*)

ISBN (Paper): 90 265 1483 2 - Price US\$ 39.00 / Dfl. 70,00 (*)

(*) exclusive of local sales tax

ALSO OF INTEREST

Signal Processing, Speech and Music
Stan Tempelaars

Stan Tempelaars has been teaching signal processing for 30 years. This book offers a comprehensive introduction to the theory of signals and systems and the way in which this theory is applied to the study of acoustic communication (both analog and digital): the development of systems for producing, transmitting and processing speech and music signals. The intention of the book is to make the reader acquainted with the refined and powerful theoretical and practical tools that are now available for this purpose.

After having finished the book the student will understand such concepts as amplitude and phase spectrum, impulse and frequency response, amplitude and frequency modu-

lation, as well as such methods for the analysis and synthesis of speech and musical systems like LPC and wave shaping. The use of complex numbers is avoided and a knowledge of mathematics beyond high school is not necessary.

This book is designed for students of musical technology, sonology, and phonetics. It can be used as a primary text for courses dealing with acoustical and signal aspects of speech and music. Each chapter has a problems and solutions section. Conservatories, music and engineering departments should find this book invaluable.

Order Information:

ISBN: 90 265 1481 6 - Price US\$ 91.00 / Dfl. 155,00 (*)

If 8 or more copies are adopted for course use: US\$ 40.00 / Dfl. 68,00 (*)

(*) exclusive of local sales tax

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THE NETHERLANDS
EDEJONG@SWETS.NL

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NEWS FROM SOUTH AMERICA II ENCONTRO DE MUSICA ELETROACUSTICA

From May 10 to 15, 1997, was held the II Encontro de Musica Eletroacustica at Brasilia (Brazil), directed by composer Jorge Antunes. Composers and researchers from Brazil, Argentina and several European countries were there to give lectures, participate on round tables and present their works on concerts. Among them: Jocy de Oliveira, Rodolfo Caesar, Frederico Richter, Rodolfo Cicchelli Velloso, Edson Zampronha, Flo Menezes, Jonatas Manzolli, Guto Caminhoto, Luis Roberto Pinheiro, Sergio Freire, Helcio Muller, Anselmo Guerra, Conrado Silva (born in Uruguay), Silvio Ferraz, Vania Dantas Leite, Fernando Iazzetta, Raul do Valle from Brazil; Annette Vande Gorne and Leo Kupper from Belgium; Jean-Claude Risset and Daniel Teruggi (born in Argentina) from France; ICMA ARRAY V17, N2

Adolfo Nunez and Ana Maria Vega Toscano from Spain; Igor Lintz Maues (born in Brazil) and Klaus Ager from Austria; Lydia Kavina, from Russia; Sten Hanson and Ragnar Grippe from Sweden; and Ricardo Dal Farra from Argentina.

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EXPERIMENTA

The Experimenta series will run all year long during 1997 in Buenos Aires, Argentina, presenting concerts, lectures and workshop by artists like: Elliot Sharp, Zeena Parkins and Soldier String Quartet in March; Larry Polansky, Chris Mann and Capitanes de la Industria during April; Jose Halac, Kato Hideki and Masahiko Kono in May; Richard Teitelbaum, Carlos "Zingaro" and Leo Masliah during June; Livio Tragtenberg, Wilson Sukorski and Klaus Shoning in July; James Tenney, Adriana de los Santos, David Moss and Cergio Prudencio in August; Fred Frith and Alejandro Iglesias Rossi during September; Warren Burt and Laetitia Sonami in October; Maarten Altena and Les Granules during November. Experimenta is directed by Claudio Koremblit.

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INTERNATIONAL ELECTROACOUSTIC MUSIC CONTEST OF SAO PAULO

The Jury of CIMESP 97 selected among 143 pieces of 109 composers the following works: *Nuit Cendre* (1996) by Gilles Gobeil (Canada), First Prize and Public Prize; *Altered Images* (1995) by Pete Stollery (UK), Second Prize; *Todo Azul, Escrevo com Lapis, Num Ceu Azul* (1996) by Celso Aguiar (Brazil-USA), Honorable Mention; *Velocity* (1996) by Peter Batchelor (UK), Honorable Mention; *3b* (1996) by Ioannis Kalantzis (Greece-France), Honorable Mention; *Unacres* (1996) by Ralf Ollertz (Germany-Belgium), Honorable Mention.

An expressive public voting was given also to the composition *Expasum* (1997) by Ignacio de Campos (Brazil). The Jury decided also to consider *Hors Concours* the composition *Sonora (Fabulae IV)* (1992, revision 1997) by Francois Bayle and decided to make him an homage programming his work at the concert with compositions by the Jury itself. CIMESP is organized by Studio PANaroma of Sao Paulo, Brazil.

News reported by Ricardo Dal Farra
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Fax: (+54-1) 827-0640
Email: dalfarra@clacso.edu.ar

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INTERFACE 97 - Computers * Music * Education Conference Programme

FRIDAY 11 July

1600-1800
Registration
1800
Opening and Keynote Address
1900-2015
Concert 1
2030-2230
Conference Dinner
2300
Late event 1

SATURDAY 12 July

0900-1030
Paper Session 1
1030-1045
Studio Reports
1045-1115
morning tea
1115-1215
Paper Session 2
1215-1230
Studio Reports
1230-1330
LUNCH
1330-1530
Concert 2 (with break)
1600-1830
Paper Session 3
2000-2230
Optional NZSO concert
2230-2330
Late Event 2

SUNDAY 13 July

0900-1030
Paper Session 4
1030-1045
Studio Reports
1045-1115
morning tea
1115-1215
Paper Session 5
1215-1230
Studio Reports
1230-1330
LUNCH
1330-1500

Announcements, cont.

Concert 3
1500-1600
Paper Session 6
1600-1700
Panel Discussion
1730
ACMA AGM

LIST OF PAPERS AND REPORTS

Paper:
Who Calls the Tune: Problems and Possibilities in New Zealand Electroacoustic Music

Ian Whalley
Music Department
University of Waikato
(0900 Saturday)

Paper:
Sound Mapping: A Musical Exploration of Urban Space

Iain Mott
Conservatorium of Music
University of Tasmania
(0930 Saturday)

Paper:
Simulation and Simulation of Rectangular Room Resonant Modes

Densil Cabrera
Department of Architectural and Design Science
University of Sydney
(1000 Saturday)

Report:
Tasmanian Conservatorium of Music Interactive Music Research Team

Stuart Favilla
Conservatorium of Music
University of Tasmania
(1030 Saturday)

Report:
The University of Waikato Digital Music Studios

Ian Whalley
Music Department
University of Waikato

(1037 Saturday)

Paper:
Microtonal Harmonic Systems in Harmonic Coloured Fields, Parts 1, 2 & 3

Warren Burt
(1115 Saturday)

Paper:
Taming Chaotic Waveforms
Gordon Monro
School of Mathematics and Statistics
University of Sydney
(1145 Saturday)

Report:
New Developments in the University of Melbourne Electroacoustic Studios

Stephen Ingham
University of Melbourne
(1215 Saturday)

Report:
Lake Huron 3-D Audio Project

Greg Schiemer
Conservatorium of Music
University of Sydney
(1222 Saturday)

Paper:
Real Time Control of Synthesis Parameters for LightHarp MIDI Controller

Stuart Favilla
Conservatorium of Music
University of Tasmania
(1600 Saturday)

Paper:
Interfacing Effectively with Classroom =ESTeach nology

Bradley Merrick
Faculty of Education
University of Sydney
(1630 Saturday)

Paper:
R.I.C.E (Restricted Interval Counterpoint Engine)

Jirrah Walker
Conservatorium of Music
University of Tasmania
(1700 Saturday)

Paper:
Cellular Automata in the Spectral Domain

Tim Kreger
Australian Centre for the Arts & Technology
(1730 Saturday)

Paper:
An Examination of Contemporary Synthesizer Interface Design

Anthony Sonogo
University of Melbourne
(1800 Saturday)

Paper:
Streaming: Patchwork Modules for the Generation of Recursive Variants of MIDI File Parameter List

Stephen Ingham
University of Melbourne
(0930 Sunday)

Paper:
IEEE 1394 : MIDI via Firewire

Greg Schiemer
Conservatorium of Music
University of Sydney
(1000 Sunday)

Report:
The Electroacoustic Production of the L.M.E of the National University of Cordoba

Martin Alejandro Fumarola
National University of Cordoba
Argentina
(1030 Sunday)

Paper:
Concerning the Percertion of Sound in Space

David Worrall
Australian Centre for the Arts and Technology
(1115 Sunday)

Paper:
Composing with MIDI: A Student s Perspective

Sam Airy
Tai Poutini Polytechnic
Auckland
(1145 Sunday)

Paper:

Towards a Unified Grammar for Composition Combining Computer Music and Computer Composition

Robert Douglas
Conservatorium of Music
University of Sydney
(1500 Sunday)

Paper:

Change and Permanence in Latin American Electroacoustic and Computer Music

Martin Alejandro Fumarola
National University of Cordoba
Argentina
(1530 Sunday)

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**CALL FOR PARTICIPATION
ELECTRONIC MUSIC FESTIVAL
IN CUBA (1998)**

We have the honor of inviting you to participate in the celebration of the **VII Festival Internacional de Musica Electroacustica**, which under the name of "Primavera en La Habana," will take place from the 2nd to 7th of March, 1998, in Havana, CUBA.

The Festival has taken place in Varadero Beach since its creation, up until its sixth edition. On this occasion we have chosen the colonial part of the capital, Old Havana, due to its architectural beauty and its long cultural tradition. Many events will take place in the Convento de Santa Clara, a magnificent restored convent in Old Havana, with numerous possibilities for outdoor performances.

Participation in the festival will have a number of options for those interested in taking part:

I. Multimedia shows, for which entries will be open until the 30th of November 1997.

II. Concert presentations for:

- a) Works for electroacoustic music on tape.
- b) Works for electronic means and acoustic instruments, on tape.
- c) Live electronic works (en situ)
- d) Live electronic works with acoustic instruments (en situ)

The entry date for these presentations expires January 15, 1998.

All projects should be sent to the Organizing Committee before expiration of entry dates.

We hope to be able to enjoy your company in this, a year so full of cultural and historic celebrations.

Cordially,

Juan Blanco Alicia Perea Maza
Presidente Presidenta
Festival Instituto Cubano de la Musica

For more information, please contact the Organizing Committee:

Instituto Cubano de la Musica Laboratorio
Nac. de Musica Electroacustica
Calle 15 esq. a F #452 Vedado Calle 17 esq.
a I #260, 1er piso, Vedado
La Habana, 10400, CUBA La Habana,
10400, CUBA
tel (53 7) 31-1698 fax (53-7) 66-2286
fax (53-7) 33-3716

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**SEAMUS AWARD FOR LIFETIME
ACHIEVEMENT TO
BEBE BARRON**

reported by Elizabeth Hinkle-Turner

The Society for Electro-Acoustic Music in the United States annual award for lifetime achievement in electro-acoustic music was presented to film music composer Bebe Barron (and posthumously to Louis Barron) at the SEAMUS national conference in Kansas City.

SEAMUS has been presenting this award for over a decade and other recipients have included Max Mathews, Charles Dodge, and Mario Davidovsky. As one of the female members of the national board of SEAMUS (Bebe - by the way - was a charter member of the society), I am happy to be part of the first conference in which a woman will be honored for her work with music technology. It is my sincere hope as a board member in SEAMUS and IAWM, that we continue to honor the considerable achievements of pioneering women in the field. Names like Oliveros, Spiegel, Smiley, Ivey, and Shields immediately come to mind and I encourage all of you to explore the achievements of women in music technology in your own studies and with your students.

Below I have included a brief excerpt from my book detailing Bebe's most famous

contribution, the score to "Forbidden Planet." A bibliography and list of works follows.

Elizabeth Hinkle-Turner
Treasurer, SEAMUS
Board member for Women and Technology, International Assoc. Women Musicians (IAWM)

Hollywood, however, had already been utilizing instruments such as the theremin in movie scores for many years, and the first widespread American public exposure to the possibilities of the electronic medium occurred with the 1956 release of MGM's feature film *Forbidden Planet*. In addition to its elaborate space sets and advanced visual effects, *Forbidden Planet* featured an exclusively electronic musical score composed by Bebe Barron (b. 1927) and her husband Louis (1920-1989). The Manhattan-based couple had already completed several short experimental film scores utilizing electronics but had never employed their apartment electronic music studio for a full-length soundtrack. The Barrons described their compositions in an early article as not functioning in a traditionally musical way but instead as non-linear constructions designed to describe a cast of characters engaged in a dramatic plot. Once they decided on the characters' moods and situations, the couple completed a series of electrical circuits which functioned electronically in ways analogous to the human nervous system. Decisions about the circuitry were strongly influenced by their studies of the science of cybernetics which proposes that certain natural laws of behavior are applicable to both animals and more complex modern machinery. The composers employed their noise-producing circuits to emulate such needed characterizations as serenity, anger, and love. The story of *Forbidden Planet* is a re-telling of Shakespeare's *Tempest* with the modern additions of spaceships, mysterious killer creatures, and the lovable "Robbie the Robot." The crashing beats of the deadly "ID monster" theme coupled with the bubbly mood music designed for Robbie and other electronic sound effects added a creative integrity and believability to the film clearly separating it from much of the more lurid post World War II Nuclear Age horror and sci-fi Hollywood fare. Bebe and Louis' success signaled the beginning of the effective use of electroacoustic music by the

Announcements, cont.

modern movie industry.

Bibliography

Barron, Bebe and Louis. "Forbidden Planet". *Film Music*. 1956, p. 18

Brockman, Jane. Interview with Bebe Barron. *The Score*. Fall/Winter 1992

Rubin, Steve. "Retrospect: Forbidden Planet," *Cinefantastique*, Spring 1975, pp. 5-13.

*There is also a fine biographical entry on Barron in the *New Grove Dictionary of Women....* by Barry Schrader

List of Works

Bebe Barron (all composed with Louis Barron)

Bells of Atlantis. Film score. 1952.

Cannabis. Film score. 1975.

The Circe Circuit. Tape. 1982.

The Computer Age. Film score. 1968.

Crystal Growing. Film score. 1959.

Elegy for a Dying Planet. Tape. 1982.

For an Electronic Nervous System. Tape. 1954.

Forbidden Planet. Videotape or Laserdisc. MGM/UA Home Video, 1991.

Heavenly Menagerie. Tape. 1951-52.

Jazz of Lights. Film score. 1956.

Miramagic. Film score. 1954.

More Than Human. Film score. 1974.

Music of Tomorrow. Tape. 1960.

New Age Synthesis II on *Totally Wired*. Pennsylvania Public Radio

Associates Cassette Series, 1986.

Space Boy. Tape. 1971. Revised and used for film of same name, 1973.

Time Machine on *Music from the Soundtrack of Destination Moon and Other Themes*. Cinema Records LP-8005, 1970.

The Second Annual International Music Software Competition was held in June, 1997 at the International Institute for Electroacoustic Music in Bourges, France. The motivation of the competition is to acknowledge the excellent free music software that is available already, and to encourage further development. The competition was open to all developers of freeware and shareware musical applications. Over 30 entries were received from 10 countries of Europe, North and South America, and Asia. The platforms included Macintosh, PC/Windows, NeXTSTEP, Atari, and SGI.

The jury was impressed with the quality of the entries, and the breadth of applications they address. Relative to last year's entries, we were very impressed by the quality and user-friendliness of the entries in the area of real-time signal processing. Another recent development is the appearance of high-quality music software on the Silicon Graphics platform.

The jury had the option of awarding prizes of FF 5000 and nominations worth FF 2500 in each of five categories, and, for the first time, a grand Prize of FF 10000 called the "Golden Max" was introduced into the competition. The winners are listed below, and receive our sincere congratulations.

Jury (in alphabetical order)

Dominique-Georges Begue (France)

James Dashow (Italy)

Philippe Depalle (France)

Hughes Genevois (France)

Francois Giraudon (France)

Alain Mangenot (France)

Stephen Travis Pope (USA)

Todor Todoroff (Belgium)

Awards

Grand Prize "Golden Max"

Nick Porcaro et al. (USA) for "SynthBuilder" (NeXTSTEP)

Category 1—Non-real-time sound analysis/synthesis

Prize: William Schottstaedt (USA) for "Snd" (SGI)

Category 2—Computer-aided composition and realization

Prize (Ex Aequo): Jean Piche and Alexandre Burton (Canada) for "Cecilia" (SGI)

Prize (Ex Aequo): Bernard Bel (France)

for "Bol Processor" (Mac)

Category 3—Real-time sound synthesis and processing

Prize: Dylan Menzies-Gow (UK) for "Lamb" (SGI)

Nomination: Gerhard Behles (Germany) for "Stampede" (SGI)

Category 4—Multimedia software

Prize: Philippe Montemont (France) for "CD Regie" (Macintosh)

Nomination: Arnaud Masson (France) for "Arnold's MIDI Player" (Macintosh)

Category 5—Other applications (games, editing, pedagogic, networking, etc.)

Prize: Tontata (Japan) for "MIDIgraphy" (Macintosh)

BOURGES.....MUSIC PRIZES

For full information please go to :

<http://www.gmeb.fr/Sommaire-dir/index2.html>

Summary only:

Prizewinners of the 24th Competition: Bourges 97

RESIDENCIES were awarded to Peter Batchelor (UK), Rose Dodd (UK), Valentin Lazarou (Bulgaria), Till LeFranc (France), Robert Mackay (UK), Alexandre Sanielevici (Canada)

QUADRIVIUM/QUINTIVIUM:

(5 categories)

GRANDES PRIX:

Changes Music Joseph Anderson (USA)

Phrenos Ludger Brummer (Germany)

STUDIO MUSIC:

Pagan Circus Matthew Adkins (UK)

Ascent Andrew Lewis (UK)

Finalists: *Invisible Crowds* Cathy Lane, *Cattura Magica* Elio Martusciello.

ELECTROACOUSTIC MUSIC WITH INSTRUMENTS:

PRIX:

Mas libre y mas cautivo Joseba Torre (Spain)

Finalists: *manao Tupapau* Mauro Cardi (Italy), *Winter Aconites* Frances White (USA), *Transiciones de Fase* Manuel Rocha Iturbide (Mexico)

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BOURGES

Second International Music Software Competition reported by Stephen Travis Pope

Statement of the Jury

**ELECTROACOUSTIC PROGRAMME
MUSIC:**

PRIX:

Spirit Levels Roger Doyle (Ireland)
Portrait of Timbre as a wild Wooddove Yee
On Lo (USA)

Finalist: *Movimento, Quietudine*, Elio
Martusciello (Italy)

**ELECTROACOUSTIC CHARACTER
MUSIC:**

PRIX:

Proiezioni Elio Martusciello (Italy)

Finalists: *Die Unsichtbare front* Ipke Starke
(Germany)

Jako te biale Myszki Lidia Zielinska (Po-
land)

MAGISTERIUM: Awarded to any com-
posers with at least 20 years professional
experience in electroacoustic music.

PRIX: Juegos 1 Eduardo Kusnir (Argen-
tine/Venezuela)

**PRIX ARS ELECTRONICA 97
COMPUTER MUSIC CATEGORY**

Golden Nica awarded to Matt Heckert
(USA) for *Munich Samba*
Distinctions to Maryanne Amacher (USA)
for *The Levi-Montalcini Variations* and to
Jonty Harison (UK) for *Unsound Objects*

Congratulations to all !

more information on the prizes and the Ars
Electronica Festival can be found at
<http://www.aec.at>
email info@aec.at

Congratulations to all concerned ! Many
composers also reached the pre-selection
stage, an achievement in itself, but there
isn't space to list them here. Check out the
Bourges page for the full details.

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Reviews

CD REVIEWS

Chrysopie Electronique - Bourges
Vol 7 Christian Clozier
Par Pangloss Gymnopde
Le Temps Scintille et le Songe est Savoir
LDC 278 1104

Institut International de Musique Electroacoustic/Bourges
Place Andr Malraux
BP 39 - 18001 Bourges Cedex - France
Email: agmeb10@calvacom.fr
This CD by Christian Clozier is volume 7 of 'Chrysopie Electronique', which is a collection devoted to works realized in the studios of the GMEB/International Institute for Electronic Music/Bourges. (Chrysopoetics is the alchemistic art of turning base metals into gold.)

Christian Clozier was born in 1945 at Compigne. Together with Franoise Barriere, he founded the GMEB in 1970. They founded and organize the festival 'Synthese' and the Bourges International Grand Prix for Electroacoustic Music.

Christian Clozier has composed musical works and created musical shows and spectacles. His shows use scenic arts and visual expressive forms in combination with amplified sound. Such site-specific works have been realized at interesting locations like the Chteau of Breteuil; at the Chteau de Chambord with lasers, lights, and fireworks; for the Cathedrals at Orleans and Bourges; the Abbey of Noirlac; the Chteau at Oissel; and in Bonn, Como, and Venice.

The CD presents two works: *Par Pangloss Gymnopde* dating from 1984, and *Le Temps Scintille et le Songe est Savoir* (*Time Sparkles and Dreaming is Knowing*) which was commissioned in 1988 by Jaques Rimbault, Deputy-Mayor of Bourges, for Saint Etienne's Cathedral, and presented as an open-air sound spectacular.

Par Pangloss Gymnopde - 1984 (29"13")

The Sounds.

First Movement (9'41") Begins with a drone of filtered synthesized sounds; synthetic bass moves by semitones; layers of synthe-

sized sound; higher repeated figures of 'industrial noise'; rhythm loops like an electronic set of chimes; distorted rhythmic figures; loud synthetic strings enter; louder distorted chords descend in pitch; rapid motion gestures lead to a cadencial flourish.

Second Movement (5'59")

AM sound with continuous pedal tone; ring modulated HF washing around in a reverberent sound space; pipes and water flushing; modulated HF noise; noise loops; Carillion-like repeated patterns; retrograde noise figures; tunes enter in a high tessitura, like playful folk songs. Third Movement (7'40")

Rapidly changing filters creating whisps of bird calls; they modulate recorded source material; vocal tract resonances in a confined chamber; gluttural sounds; deep bass figures; electronic cries and rasps; more bass figures; electronic drums; rising, whirling, continuous sounds; more bass figures; percussive interjections like a lot of plucked cactus spines; jaw harp-like sounds; more bass sounds.

Fourth Movement (5'53")

Loud grinding; high descending resonant filters; fireworks before they explode; repeated low synth figures; staccato chords; electronic loops with transpositions; rapid-fire electronic sequences; loud distortion; string pedal tones; quiet, low pedal; higher Carillion-like looped motives; fade.

One Listener's Interpretation

In order to interpret the work in relation to the title, one would need to be far more conversant with classical philosophy, and French philosophy, than the present author.

'Pangloss' refers to Candide's philosophy teacher, and 'Gymnopde' is the one who takes part in the annual Spartan festival. Thus there are both 'classical' and 'playful' intimations in the title of the work.

Indeed Clozier describes the four movements as a classical type. The outer two are 'polyphonic' in structure, the second movement is 'rhythmical', and the third movement is 'discursive'. This third movement

emulates a Rhondo Form with an alternation of, almost monophonic, sectional material.

Clozier alludes to playfulness in his programme notes: 'Facts are not without causes, nor Socrates without Satie.', and 'Facts are not without gnosis, nor Satie without Socrates.'

Finally he writes: 'In facts (sic) this music is a music of effects and make-believe...'

I found this work exciting, unsettling, full of energy, and I listened with sweaty palms. It seemed the perfect vehicle for spectacle.

Le Temps Scintille et le Songe est Savoir (*Time Sparkles and Dreaming is Knowing*) - 1988 (38'58")

The Sounds

First Movement (13'03")

Synth string motives with washes or waves of moving band-limited noise; bass drones; layers; bass is transposed; in a breathing rhythm, the noise rushes like waves or cymbal rolls; electronic strings and chimes enter; distortion; layers build further then drop away; solo synth drone; harmonized and varied continuously; transposed to a new ground bass; resonant filters varied continuously; sound flies across the stereo space; a whirring bass drone accompanies fragmented HF motives; bell-like sounds are used contrapuntally with the motivic sequences; a bass drone returns; a chord is filtered; spatialized; percussive tweeks splash across a sonic field; sounds tend higher before disappearing in the heavens.

Second Movement (2'40")

Synth string chords enter like a revolving Leslie speaker; more layering; more filtering; a fade.

End of Part I.

Third Movement (5'44")

Pointillistic synthetic chords; night sounds?; time sparkling?; bass drone with moving buzz; ultra-rapid fuzz guitar a la Van Halen; string chords with rising glissandi chimes; twang sounds with Oriental-sounding motives of sparse percussive woodblock timbres.

Fourth Movement (4'53")

Octave-modulated, loud, continuous synth strings chords; lots of filtering; cross-mixed

with nasally-resonant timbres; this coloured drone is a multi-layered, squeezebox of moving raw sound energy; movement fades.

Fifth Movement (5'46")

Distorted, fortissimo drone; high-pitched shrieks wail; more distorted continuant; clusters of drones create beats and smear the pitch space, like a carnival mirror; energy dissipates like a runner in the cool-down phase after a race; single pitches, warmer timbres, softer dynamics; dancing tones, moving, wah, shwah; jaw harp-like sound; three bass pulses.

End Part II

Sixth Movement (6'52")

Loud shrieks of descending, distorted noise; organ pedal and fluttering noise; rising bands; these are all layered together; fade; more organ pedal; and fluttering noise; fades; string loops; shimmering drone noise plus punches of deep bass stutters; these break into a frenetic energy figure of their own; noise continues and grows; culminates in three final noise gestures to terminate the work.

One Listener's Interpretation Brigitte Massin notes in the preamble that *Le Temps Scintille et le Songe est Savoir* is a line extracted from Paul Valéry's poem 'Le Cimetière Marin' (literally: Marine Graveyard). Massin cautions: 'Do not ask the composer to explain how the title relates to the piece: he will hotly protest the uselessness of such a question.' - but Massin then goes on to talk about '...the perpetual creative murmur of the sea or the quiet motion of the heavens,' in relation to the work. Indeed, my listening notes refer to 'washes or waves of moving band-limited noise' and 'sounds...disappearing in the heavens'. But is it drawing the nautical analogy too far to describe the work as a 'voyage', as Massin does?

Rather I feel the work exhibits fluctuating energies that conjure up a sense of spectacle, as the excitement of the piece grows and grows. I can imagine the context for a multi-extravaganza-rendering of these exciting sounds.

Clozier is a master of, what seems to me to be, classic analogue synthesis, and these works left me with a desire to find out more about the principles and instruments known as Gmebogosse, Gmebaphone, and the Antonymes, that he has developed.

There are extensive CD notes in French and English, including a section by Clozier 'to those who want to listen'. Here Clozier asserts: 'To listen to music is to exchange time with the composer: the listener and the composer nourish each other'.

For the composer: '...that which he finds will give meaning to what he hears, that is, one possible meaning. It will throw light upon certain aspects of his own self.'

For the listener: 'You are the one who must abstract yourself from the spaces you occupy...in order to discover and hear the space wherein reside those sounds, the space wherein music moves, lives and has its being.'

In discussing spectacle and music, Clozier writes: 'The shows are not spectacles with music, but music turned into spectacle, or spectacles derived from music.'

Under the heading of 'Notebooks', Clozier quotes Giacometti, Faure, Debussy, and Valéry to emphasize the abstract nature of music. Music is neither subject nor object, but an intermediary between the two.

'The ear is perception's favorite sense. It guards, in a manner of speaking, that part of the border where the eye is blind.' - Paul Valéry (Analecta IV).

Review by David Hirst

David is Senior Lecturer in Contemporary Music Technology at La Trobe University in Melbourne, Australia, and editor of the online contemporary music journal MikroPolyphonie (<http://farben.latrobe.edu.au/mikropol>).

=====

John Bischoff's *The Glass Hand*
reviewed by Lynn F. Kowal

The "art" of computer music, experimental or otherwise, must push beyond the realm of simply testing the boundaries of the technology. The job of the computer music composer is to explore those boundaries, move those boundaries, and then wrestle those boundaries to a new understanding of musical form. Unfortunately, the majority of the computer music heard on John Bischoff's CD *The Glass Hand* (Artifact Recordings ART 1014) is a digital rehash of old electronic music ideology. There is more to organizing computer generated tones than a semi-random assemblage of

squeaks and sputters and waves of machine-belching noises.

On the CD's cover and in liner notes, Bischoff explains his compositional techniques employed on these seven recordings as "creating a number of software tools using the language HMSL (Hierarchical Music Specification Language) which enabled me to search randomly for sonic textures on a MIDI synthesizer" — primarily a Yamaha TX81Z and a Peavey DPM-V3. Bischoff goes on to say, "I also hoped to find a way to get beyond the feeling of 'notes' in MIDI-based music, to gain some of the flexibility of my earlier, non-MIDI computer music in these newer instruments."

If Bischoff feels he is successful in attaining flexibility in performance, he has done so at the expense of developing original sounds. The overall selection of timbres is so tainted by the Yamaha FM synthesis palette — recognizable algorithms are everywhere — that the pieces feel dated and out of place on a 1996 release. The whole CD plays like an unintentional retro-tribute album to the 1980's FM synth heyday.

Each track on *The Glass Hand* was realized in a one-pass, real-time recording. In this part of the process, Bischoff's techniques are successful, for he manages texture changes and mutations over static sonic structures that give a sense of landscape and environment. The accomplishment here, however, is in the field of record engineering and not so much in musical composition.

For instance, to get a feel for the overall sonic fabric of the selections on *The Glass Hand* follow these simple steps: 1) go to your neighborhood construction site; 2) sit as near as you can to get a close-up listen of a jackhammer on concrete; 3) wait a few minutes to clear the ringing from your ears and follow that by sticking your head inside a laundry dryer operating at full speed. You have now successfully re-created track 3 titled *Surface 2*. (Incidentally, this technique also works well for portions of track 7 *The Web of Fascination*.)

Commercially available computer music seems to have hit a creative wall. Time after time, composers are releasing recordings, presenting "new" performances, giving lecture upon lecture on the art and form of computer music without seeming to realize how incredibly homogenized these "indi-

vidual" works are becoming. Similar timbres, similar rapid-fire "randomized" rhythms, similar gimmicky approaches to thematic material. Perhaps it is time for the computer music creative process to be thoroughly re-analyzed and set off in a direction that focuses less on the "computer" and more on the "music" side of the genre. Computer musicians should all try to stop formulating music with their heads and start relying on their ears.

Lynn F. Kowal is a composer of electronic and computer music and sound design specializing in works for film, television, and multimedia. In addition to winning an Emmy award for Outstanding Original Score - Educational Programming, Kowal composed and performed the Main Title Theme for the NBC-TV drama series "Homicide: Life on the Street." She has a M.M. in Electronic and Computer Music from Peabody Conservatory of the Johns Hopkins University and a B.M. in Synthesizer Performance from Virginia Commonwealth University - School of the Arts and has taught Computer Music at the Peabody Institute's Preparatory Division and at The Baltimore School for the Arts.

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David Tudor *Three Works For Live Electronics*
1996, Lovely Music, Ltd., LCD 1601

reviewed by Jon Christopher Nelson

This recording features three of David Tudor's live electronic compositions written between 1972 and 1981. Two of these works, *Pulsers* and *Untitled*, were previously released in 1984 on an LP while *Phonemes* is being released for the first time on this Lovely Music, Ltd. CD.

Pulsers, a twenty minute composition written in 1976, incorporates incessantly pulsating percussive sounds generated live with analog circuitry. This particular 1984 recording is a microcomputer-automated mix of source tapes, live concert recordings, the resultant 8-track tape, and an electronic violin improvisation by Takehisa Kosugi. According to Tudor's program notes, "With analog circuitry, the time-base common to

the rhythms can be varied in many different ways by a performer, and can eventually become unstable." Despite this possibility, my listenings find the rhythmic structure to be very stable with regularly recurring pulses in minimalistic patterns.

Pulsers starts with great fury as relatively fast groupings of four ascending notes are repeated. The harsh phase-shifted feedback sounds offer a rich and robust analog sound as well as provide the trigger source for the electronic circuit's trigger mechanism. In this work, Tudor adds one or two pulsating layers over the fundamental repeated ascending patterns to create syncopated contrapuntal textures. The ascending patterns undergo a slowly evolving additive process that culminates about eleven minutes into the composition with repeated patterns that include up to nine notes.

These repeated note patterns in *Pulsers* remind me of historical electronic works that utilized sequencers such as Part B of Morton Subotnick's *Silver Apples of the Moon*. In Subotnick's work, an additive process is evident in which notes of varying timbres and rhythms are interwoven to create a constantly evolving landscape. In contrast, Tudor utilizes a narrow range of percussive timbres and the rhythmic transformations exhibit a slower rate of evolution. Some of these transformative processes in *Pulsers* result from cross-gating the variety of source materials into the final mix. In some cases, the cross-gate transformations were very interesting and compelling while in other instances they seemed forced and cumbersome.

Takehisa Kosugi's electronic violin improvisation in *Pulsers* begins about eight minutes into the recording. For this listener, the introduction of new timbres provides a welcome change. This improvisation is played through a delay and was drenched with reverb. The resultant sonic world reminds me of the jazz electronic violinist Jean-Luc Ponty. Kosugi's improvisation is a whimsical reverie on one chord.

Ultimately for this listener, the live electronics' consistent timbre, the work's minimal rhythmic transformations, and the lack of any substantial textural change become monotonous. Although the electronic violin improvisation provides a welcome contrast, it too becomes tiresome in its harmonic and motivic redundancy. This also strikes me as a work for live electronics that loses much of its impact when committed

to a recording.

The second and oldest work on this CD, *Untitled*, represents, according to Tudor, "one of the high points" of Tudor's electronic career. I concur that this composition is probably one of Tudor's best works and, as a result, provides the highlight of this CD. The work is generated by two linked chains of components, each with multiple feedback loops that have variable gain and phase shift controlled in real time. These components do not include oscillators, tone generators, or recorded source material. Several performances using these linked chains were recorded and fed into a third chain of components that further processed the sounds and also distributed the sound amongst four discrete channels. Although the work was originally performed with John Cage's vocalization of *Mesotices* re Merce Cunningham, this recording includes vocal improvisations by Takehisa Kosugi.

This work includes wild analog electronic sounds that are both chaotic and rich. The sounds are captivating and at many times evoke a veritable jungle of electronic sounds. The electronic screeching and warbling provides an exciting and interesting sonic palate. In addition, the hard panning and filtering is a bold and refreshing emulation of a four-channel performance. Unfortunately, I am distracted by both the content and recording quality of the vocal improvisations. In this particular mix, the electronic sounds are much more present than the vocalizations, exacerbating the stark contrast in the quality of the materials. Mixing the electronic sounds with a recording of John Cage or presenting the electronic sounds without vocalizations would be preferable to this recording.

The final work on this CD is Tudor's 1981 composition *Phonemes*. Like many other electronic compositions, this work is based upon a theme and variations structure in which the theme includes several relatively short recorded sounds that undergo numerous transformations. In *Phonemes*, a percussion generator and vocoder are used to manipulate two source sounds. In a performance of this work, the short sounds are lengthened and the long sounds shortened.

Phonemes begins with an inviting and warm ascending glissando in a low register. After a lengthy pause, a second ascending glissando punctuated by a number of slight

frequency drops throughout the glissando is stated. This is followed by two shorter descending glissandi in the upper register and another ascending glissando in the low register, each separated by lengthy pauses. After a very long silence, short iterations of these glissandi are presented. The short glissandi have a percussive nature due to their very short durations. These short notes, reminiscent of single granular synthesis grains, predominate the composition with only several longer notes recurring at seventeen and twenty-six minutes into the work. The similarities with granular synthesis techniques resound twenty-two minutes into the composition where a fast succession of notes generates a low frequency amplitude modulation artifact. Greater rhythmic activity also prevails during the last several minutes of Phonemes.

The consistently long silences between sounds create an opaque, pointillistic texture throughout most of this composition. Like Pulsers, Phonemes exhibits little timbral evolution since the sonic manipulations lie firmly within the rhythmic domain, focusing the listener's attention on rhythmic relationships. However, when the rhythmic relationships unfold slowly throughout this thirty-one minute composition, greater timbral manipulation would have been a welcome compositional element for this listener.

David Tudor's skill in building his own electronic circuitry and performing live electronic music demands great respect and admiration. I am particularly intrigued by Tudor's use of feedback lines to generate diverse and interesting sounds without oscillators or other sound generators on this recording. Although my own aesthetic interests lie elsewhere, this CD is a must for aficionados of Tudor, Cage, live electronics, and home-built sound modules.

=====

Paul Dolden

L'ivresse de la vitesse (Intoxication by speed)

Empreintes Digitales/I Media 2 discs

Reviewed by Hal London

There is so much musical output contained on these two discs that it took me several listenings to come to grips with it all. In the liner notes, Dolden describes his current artistic intentions as involving the "speed-

ing up of an excess of musical ideas so that the composition and its materials exhaust themselves in the shortest time possible". Most of the works here reflect this principle in different ways. Another perceptual factor in listening to these pieces is the manner in which Dolden intersperses pieces for tape alone with works featuring solo performers backed with material from the solo tape compositions. This approach has the twofold effect of emphasizing hitherto unstressed aspects of the tape pieces and also of blurring to some extent the distinctions between the individual works. These considerations aside, Dolden constantly varies his approach, not hewing to a quick-cut, sound-mass approach to the exclusion of linear development.

Dolden first composes simultaneous lines of music on manuscript paper, then digitally records each line as performed by an acoustic instrument. The parts are then digitally mixed with little or no signal processing. His exclusive use of acoustic instruments is justified by his opinion that electronic synthesis techniques are unable to produce a large palette of convincingly different timbres. A huge palette of acoustic sounds are used for these pieces, including nearly every orchestral instrument, voices, ethnic and folk instruments, and percussion. And although he does not use signal processing, he occasionally achieves DSP-like effects through ingenious mixing of his sound sources. The mixing often involves overlays of 40 or more tracks, and the massed effects and climaxes achieved are impressive. His use of digital editing is equally responsible for the results, as the pace and mood of the pieces are largely controlled this way.

The title cut and the last work in this collection, both for tape alone, could not be more contrasting. "L'ivresse de la vitesse" (1992-93), encapsulating as it does the composer's more recent methods, is an exhilarating outburst of contrasting ideas and styles at a rapid-fire pace. "Veils" (1984-85) is a half-hour, 3 movement composition which explores a sonic world of subtly shifting timbres, comprising drones on acoustic but ambiguous-sounding origin. After the adjustment is made to the leisurely pace of this piece, it is thoroughly satisfying.

With the exception of these two pieces, I gravitated toward the pieces that featured solo instruments because of the focus they provide. This may be because Dolden does

not emphasize spatial placement in these works. Often, the sound struck me as completely up-front and two dimensional. No doubt this is partly because he eschews most signal processing, but the overall sound of the acoustic instruments tends to be a little washed-out. Experimenting with different microphones and preamplification should help - quality of engineering is important when this approach is taken, especially when there is extensive mixing and overlaying. The solo instruments help to impart more of a spatial quality. "Revenge of the repressed, Resonance #2" features a performance by cellist Peggy Lee which ranges from fleet passagework to elegiac phrases and extended techniques.

The harpsichord part in "Physics of seduction, Invocation #2" takes on a thunderous and threatening aspect in the hands of Vivienne Spiteri, thanks to Dolden's multi-tracking and close-miking techniques. Two pieces feature saxophonist/clarinetist Francois Houle. One of these, "In a bed where the moon was sweating, Resonance #1", strikes a perfect balance between the virtuosic solo clarinet part (often multi-tracked with amazing effect) and the tape part with its echoes (or "resonances") of preceding events.

"Physics of seduction, Invocation #1" features the composer on electric guitar in a technically adept performance which also makes use of the processed timbres which are the domain of the instrument. Dolden shows a flair for these changes of tone. His performance on guitar here gives further evidence of his mastery of the sonic resources at his disposal.

Hal London is a freelance, part-time composer who divides his time equally between acoustic and electroacoustic music. Dolden's approach in this respect is of special interest to him.

=====

Two Lines — David Rosenboom and Anthony Braxton

Lovely Music LCD 3071

Reviewed by Michael Rees

The five tracks on this CD feature Braxton on saxophones, clarinet, and flute; and composer Rosenboom on MIDI piano, software, and sampled piano. The premises for the composition, according to the liner notes, are intriguing enough: Perturbations present in a drone were magnified and translated to

Reviews, cont.

a melodic line that serves as the basis for the evolution of the piece. Much of the piano performance was processed with Rosenboom's Hierarchical Form Generator software, which controls the sampled piano (kudos to recording engineer Tom Lopez for the nearly seamless integration of the acoustic and sampled pianos).

While it has its moments, the music is generally less intriguing than the compositional premises outlined in the accompanying notes. Too often, the structures of the pieces seem to be only filled, not supported, by their content; densities are too static; Braxton's performances seem to be mostly reactionary — possibly because the HMG software only knows about what's happening with the MIDI piano — instead of interacting with the pianos. The last track, *Transference*, seems to work the best of the lot; perhaps HMG gets along better with down-tempo tunes. When it has a lot of

inputs as in the other four selections, it doesn't seem to have sense enough to quit generating output. At a slower tempo, however, the texture doesn't get so cluttered, and Rosenboom's and Braxton's performances feel more inside the algorithmically-generated material.

Members' News

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Stanford, CA

Please note that effective August 2 1997 the telephone area code will change from 415 to 650.

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DOUGLAS NUNN has recently completed his PhD on "Analysis and Resynthesis of Polyphonic Music" in the Music Technology Group at Durham University. It examines multirate STFT and wavelet approaches to audio transcription, processing, and syn-

thesis. He is currently seeking employment in this field; potential employers are invited to visit <http://capella.dur.ac.uk/doug/cv/>.

=====

MARTIN ALEJANDRO FUMAROLA has been awarded a scholarship by the National Endowment for the Arts of Argentina for a research project concerning electroacoustic music in the interior of Argentina. His electroacoustic piece "El Peregrinar de la Arana" will be part of the forthcoming self-funded CD of the Canadian Electroacoustic Community. He will produce an *ea/cm* piece at the Radio/TV Studios of Moscow

as well as he will present Latinamerican *ea/cm* to the Russian TV audience through the TV program "Electroshock" (devoted exclusively to *ea/cm*), thanks to a grant from the Argentinian government.

=====

LARRY AUSTIN's personal website address is now:
<http://www.music.unt.edu/CEMI/austin.htm>

Please also note that the CDCM Computer Music Series website address is now:
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ship, s/he is taken off the list. This is intended as a place for ICMA members to post announcements, job offers, calls for works/papers, etc. It is not a discussion list. Please, do not ask questions regarding memberships, orders, or info to this list. All questions should be addressed to: icma@sjsuvm1.sjsu.edu

There is now a separate icma mailing list for more chatty stuff. This is moderated by **John Fitch** and to subscribe, send a message with: **subscribe icma-talk** in the *body* of the message to: Majordomo@bath.ac.uk

The new ICMA web site is: <http://music.dartmouth.edu/~icma> This web site contains the ICMA software library, a list of pointers to various packages of computer music software for downloading. Also included therein is a page of links to ICMA members' home pages. Any ICMA member who would like to have her/his home page added to that list, should send the URL and all other essentials to: icma-library@dartmouth.edu

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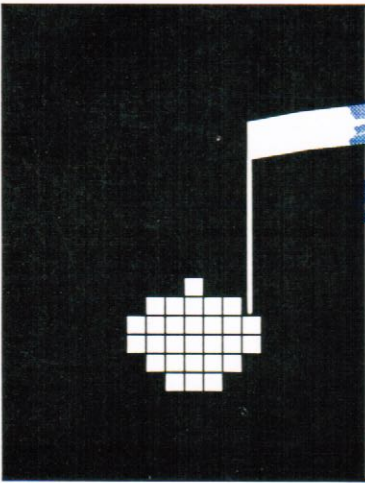
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