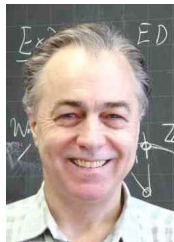


## I. President's Foreword



Dear members and friends of the Society,

I am happy to introduce to you the third newsletter of the Society for Mathematics and Computation in Music. Last June, the society had the unique opportunity to successfully organize its Second International Conference in conjunction with the John Clough Memorial Conference at Yale University. The review of this conference in the *Computer Music Journal* was extremely positive, and I want to thank the organizers for their superb job.

We now number around 100 members, and I am confident that young researchers will join the society as it unfolds in a productive way through conferences and publications. The Society's *Journal of Mathematics and Music* published by Taylor and Francis, as well as the *Computational Music Science* book series by Springer, are flourishing, as are the content that define our scientific quality. The initiative by Moreno Andreatta, Carlos Argon, and Gérard Assayag to organize next year's conference at IRCAM with Pierre Boulez's participation is sensational, and it is my wish that our Society's members will increase in numbers following these creative and productive enterprises.

I want to express my gratitude to Thomas Noll for his touching obituary for my wife Christina. Even in her last days, she strongly encouraged me to continue in my commitment to our science and the Society. It is an honor for me to follow her wishes in this great endeavor. In this spirit, it is also a special honor for me to congratulate Emmanuel Amiot on the successful completion of his doctoral exam; he is one of those precious humans for whom Christina lived.

If I may express one major theme relating to music and mathematics, in particular regarding its more widespread acceptance, I would follow the suggestion of the *Computer Music Journal* reviewers of the Yale conference and encourage more applications of our beautiful theories to composition and performance. Educators and practitioners will then learn, especially in schools of music, that these theories have concrete significance, that they are not just academic dry runs, but they are also as basic to the aesthetic utterance of music as was the Pythagorean theory in medieval architecture (Umberto Eco's book on medieval aesthetics provides a beautiful account.) In this sense, I welcome you to a new year of research and productivity toward the understanding of sounding beauty.

Guerino Mazzola  
President, SMCM

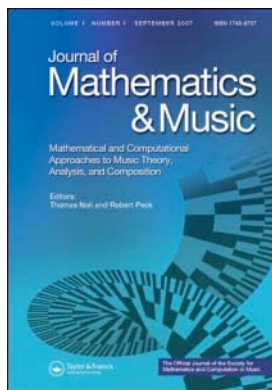
## 2. Membership Renewal

This is a gentle reminder to all to renew your society membership. The normal annual individual membership fee is

US\$50, and includes a print subscription to the *Journal of Mathematics and Music* (JMM). Membership fees received on or before May 31 will be applied to a 2010 membership and subscription to Volume 4 of JMM; membership fees received after May 31 will be applied to a 2011 membership and subscription to Volume 5 of JMM. New members who would like to retroactively sign up for the 2009 subscription year and receive Volumes 3 and 4 of the journal may do so by paying an extended membership fee of US\$90. Registrations and renewals are processed at the following website: [www.smcm-net.info/registration.html](http://www.smcm-net.info/registration.html).

Ian Quinn  
Treasurer, SMCM

## 3. The Journal of Mathematics and Music



The *Journal of Mathematics and Music* begins its fourth year of production. In addition to our two regular issues in 2010, we will feature a special issue devoted to computational music analysis, with particular emphasis on analyses of the first string quartet of Johannes Brahms. This special issue is guest edited by Christina Anagnostopoulou of the University of Athens (Greece) and Chantal Buteau of Brock University (Canada). We offer our thanks to

Drs. Anagnostopoulou and Buteau for all their work on this exciting issue. Plans are also underway for a special issue devoted to compositional aspects in 2011.

Our publisher, Taylor & Francis, is very encouraged by our growth, and has recommended our expansion. Therefore, beginning in 2011, we will add 15 pages per issue, allowing us to publish an additional three articles per volume. As always, please let us know of any problems with distribution, especially if you are experiencing any problems receiving your copies. Please also forward to us any feedback you might have on the journal. Our Editorial Board will be meeting at the MCM 2011 conference in Paris, and we would be happy to add any such input to the agenda.

Robert Peck and Thomas Noll  
Co-Editors, *Journal of Mathematics and Music*

**Taylor & Francis** is pleased to announce that JMM has been accepted into both the Science Citation Index Expanded and the Arts & Humanities Citation Index, both of which form part of the Web of Science. The Journal will be indexed back to Volume 1, Issue 1, 2007. It will receive its first impact factor in June 2010.

## 4. The Society's Next Biennial Conference



The Stravinsky Fountain next to IRCAM at the Pompidou Centre. Photo by Elaine Chew.

The **Third International Conference on Mathematics and Computation in Music (MCM 2011)** will take place June 15-17, 2011 at IRCAM, the *Institute for Research and Coordination of Acoustics and Music* in Paris, France. MCM 2011 will be integrated into IRCAM's most important artistic event of the season, the *Agora Music Festival*, which will run from June 6 to 18, 2011. As in the case of the first two conferences, which took place in 2007 in Berlin and in 2009 at Yale University, the third *Mathematics and Computation in Music Conference* aims to provide a multi-disciplinary platform dedicated to the communication and exchange of ideas amongst researchers involved in mathematics, computer science, music theory, composition, musicology, or other related disciplines. The conference will be opened by the internationally renowned composer and conductor Pierre Boulez, founder and honorary director of IRCAM. It will be accompanied by a series of conference-related artistic events – concerts, exhibitions, workshops – organized in collaboration with some of the most important cultural and educational centers of France, such as the *Centre Pompidou* and *Universciences*.

More information on MCM 2011, including the call for participation, will be posted soon on the conference website: [www.mcm2011.info](http://www.mcm2011.info)

Moreno Andreatta, Carlos Agon and Gérard Assayag  
General Co-Chairs, MCM 2010

## 5. Review of MCM 2009

This review appeared in Volume 34 Issue 1 of the *Computer Music Journal*. It is reproduced here with the kind permission of the MIT Press.

[www.mitpressjournals.org/cmj](http://www.mitpressjournals.org/cmj)  
[www.computermusicjournal.org](http://www.computermusicjournal.org)

### **Mathematics and Computation in Music 2009: John Clough Memorial Conference**

Yale University, New Haven, Connecticut, USA, 19-22 June 2009.

Reviewed by Jonathan Bragg, Cheng-Zhi Anna Huang  
Cambridge, Massachusetts, USA

The Second International Conference on Mathematics and Computation in Music (MCM) met in conjunction with the John Clough Memorial Conference 19-22 June 2009 at Yale University in New Haven, Connecticut, USA. MCM is the

biennial meeting of the Society for Mathematics and Computation in Music (SMCM), and the John Clough Memorial Conference meets every four years to commemorate the mathematical music theory pioneer. The joining of the two conferences builds on a relationship that began in 2007. The very first volume of the SMCM's flagship publication, *Journal of Mathematics and Music*, which was published in that year, featured a special issue dedicated to "The legacy of John Clough in mathematical music theory." These two conferences are naturally linked by the traditionally strong affinity between mathematics and music theory. David Cohen highlighted this continuing tradition in his keynote lecture. The conference welcome and the keynote lecture were held at the Beinecke Rare Book and Manuscript Library at Yale University, where a special collection of historic musical and mathematical materials were on display and complemented the lecture.

The four-day conference included 26 paper presentations, grouped into six sessions: "Composition, Voice-leading, Atonality," "Geometry," "Scale," "Perception," "Time," and "New Interdisciplinary Approaches." In accordance with the conference title, "Mathematics and Computation in Music," the talks fell into two categories. The first three sessions centered on topics that are more naturally approached using the concepts and analytical tools in mathematics, while the last three sessions introduced approaches that are more computational and sometimes involving human subjects. In this way, the conference followed a trajectory that nicely parallels the increasing interaction of mathematical music research with applied and empirical research in other fields such as computing, signal processing, and psychology. We feel that more frequent use of audible musical examples would have enriched some of the presentations, especially in the first half of the conference. The titles and abstracts of all the papers can be found at the conference Web site ([www.mcm2009.info/papers.html](http://www.mcm2009.info/papers.html)). The proceedings of this conference are also readily available both online ([www.springerlink.com/content/ul0p34](http://www.springerlink.com/content/ul0p34)) and in print from

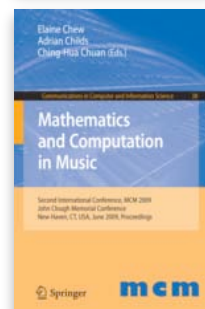
### **MCM Conference Proceedings Books**



Springer  
Communications in Computer  
and Information Science Series  
Volume 37

Timour Klouche, Thomas Noll  
(Eds.)

2009, XI, 537 p., Softcover  
ISBN: 978-3-642-04578-3



Springer  
Communications in Computer  
and Information Science Series  
Volume 38

Elaine Chew, Adrian Childs,  
Ching-Hua Chuan (Eds.)

2009, XVI, 299 p., Softcover  
ISBN: 978-3-642-02393-4

Springer.

Although the title "Mathematics and Computation in Music" implies a primarily scientific approach to music, the tutorials and a panel session at the conference showed how scientific and aesthetic approaches can inspire each other. For example, one of the tutorials introduced OpenMusic, a graphical computer-aided composition environment developed at the Institut de Recherche et Coordination Acoustique/Musique (IRCAM), in which composers can prototype their compositions by leveraging the implemented algorithms to generate musical material that would otherwise be difficult to do by hand. In addition, the panel session featured a screening of a dance performance choreographed in such a way as to embody Fourier's mathematical formula. In the future, we look forward to the conference having a call for scores and performances to further explore how research can enable new stylistic and personal expression.

Forming personal connections is important to the progress of, and one's progress in, any field; it is especially important in the interdisciplinary fields represented at this conference. Researchers at these intersections are sparse and spread across the world, and few institutions exist to bring them together. Even universities are typically partitioned into departments with little intercommunication. In the absence of many central sources of information, personal collaboration and communication enable researchers to build on past and current efforts.

The conference provided an excellent opportunity for networking and for the building of these foundational relationships. The size of the conference was intimate, with enough attendees to modestly fill a small lecture hall, enabling one to get to know a good portion of the attendees. Attendees ranged from professors and leading researchers to graduate students and even a few undergraduate students. The atmosphere was collegiate and friendly, with an emphasis on learning about the material being presented. There was also a poster session for students to present their work in progress and to receive feedback. An overall feeling of equality and a de-emphasis on seniority made possible a host of interactions, not only among professors and among students, but also between professors and students. At local restaurants and in between paper sessions, groups of professors and students would socialize and discuss ideas as fellow researchers.

Unique to this conference among similarly-themed conferences was free registration, room, and board for the first 30 students to register for the conference. In this respect, the conference provided an ideal opportunity for students early in their careers and students from a variety of backgrounds—ranging from music performance and composition to music theory and musicology, and from cognitive science and computer science to statistics and mathematics—to learn about the field and about attending this type of conference. It is important to encourage and enable young interested researchers like ourselves to participate in current research, and for this reason, we applaud the conference committee's decision to cover expenses.

The joint nature of the Second International Conference on Mathematics and Computation in Music and the John Clough Memorial Conference brought together groups of specialists in many interdisciplinary research areas, demonstrating impressive breadth and depth. The conference provided a platform for researchers to speak to a broad audience with a shared passion for music research. We came away from the conference with a

feeling of community, and we foresee exciting collaborations resulting from the new professional friendships that were initiated at this conference.

## 6. Springer Series on Computational Music Science

This series, co-edited by Guerino Mazzola and Moreno Andreatta (President and Vice President of SMCM) and published by Springer, covers all topics dealing with essential usage of mathematics for the formal conceptualization, modeling, theory, computation, and technology in music.



In 2009 two books have been published in this series: *Flow, Gesture, and Spaces in Free Jazz* by Guerino Mazzola and Paul B. Cherlin and *The Rubato Composer Music Software* by Gérard Milmeister. In 2010, the book *Musical Performance* by Guerino Mazzola will be published. At the present one book on Western Tonality is approaching the final stage of the reviewing process and four projects books have been accepted for reviewing, ranging from algebraic models in Twentieth Century Music and Musicology to Geometry of Information.

Guerino Mazzola and Moreno Andreatta  
Co-Editors, *Computational Music Science*  
[www.springer.com/series/834](http://www.springer.com/series/834)

## 7. Noteworthy News

**Emmanuel Amiot** successfully defended his doctoral thesis titled 'Modèles algébriques et algorithmes pour la formalisation mathématique de structures musicales' and consisting of a selection of his published papers, at the Université Pierre et Marie Curie. The jury was comprised of Carlos Agon, Moreno Andreatta, David Clampitt, Jean-Paul Allouche, Thomas Noll, and Emmanuel Saint-James.

**Elaine Chew** and **Alexandre François** of the Viterbi School of Engineering at the University of Southern California have been awarded a grant from the Radcliffe Institute for Advanced Study at Harvard University to organize an Exploratory Seminar on Prosody and Dialog in Speech and Music November 5-6, 2010.

**Ching-Hua Chuan**, Assistant Professor of Computer Science at Barry University in Miami Shores has been awarded the 2010 Grace Hopper Celebration New Investigator Best Paper Award for her paper entitled 'Hybrid Methods for Generating and Evaluating Style-Specific Accompaniment.' The awards ceremony will take place at the Grace Hopper Celebration of Women in Computing in Atlanta, Georgia, in September. Ching-Hua was Publications Chair of MCM 2009 and co-Editor of the conference proceedings.

**Julian Hook**, Associate Professor of Music Theory at Indiana University, has been awarded a Sabbatical Fellowship from the American Philosophical Society for 2010-11. He will spend his sabbatical working on a book, *Musical Spaces and Transformations*.

**Emilio Lluís-Puebla** and **Octavio Alberto Augustin-Aquino** of the Facultad de Ciencias of the Universidad Nacional Autónoma de México, are proud to announce the Fourth International Mathematical Music Theory Seminar to be held from November 22-24, 2010, in Huatulco, Mexico. Proposals for talks are welcome and should be sent to octavioalberto.geo@yahoo.com or lluisp@unam.mx .

**Robert Peck**, Associate Professor of Music Theory at Louisiana State University and co-Editor of the Journal of Mathematics and Music, and **Thomas Fiore**, Assistant Professor of Mathematics at the University of Michigan-Dearborn, will be co-organizing a special session for the American Mathematical Society, 'Mathematical Techniques in Musical Analysis,' at the 2011 Joint Mathematics Meetings, 6-9 January, in New Orleans, Louisiana. **Dmitri Tymoczko**, Associate Professor of Music at Princeton University, will be joining them in presenting a mini course for the Mathematical Association of America, 'Geometry and Algebra in Mathematical Music Theory.'

**Atte Tenkanen** of the Department of Musicology at the University of Turku, Finland, has published his doctoral thesis, 'Comparison Structure Analysis.' More details can be found at [oa.doria.fi/handle/10024/161766](http://oa.doria.fi/handle/10024/161766) .

**Ian Quinn's** article 'General Equal-Tempered Harmony,' published in two installments in Perspectives of New Music, was awarded the 2009 Outstanding Publication Award by the Society for Music Theory. Ian is Associate Professor of Music and Cognitive Science at Yale University, was co-organizer of MCM 2009, and serves as Treasurer of SMCM.

### Obituary: Christina Mazzola (1945-2009)

Our society is saddened by the passing of Christina Mazzola on October 3, 2009. Over many years, she shared Guerino's vision for the development of a new research discipline and dedicated innumerable hours of her spare time to administrative work for the IFM association\*, a European precursor of the SMCM, to the organization of meetings, to the creating of communication infrastructure, and to eventually institutionalize a new kind of trans-disciplinary research.

To a certain extent, the concept of "symmetry" was the spark that ignited the love and partnership between Christina and Guerino Mazzola. In 1984 Christina was working as a technical and accountability clerk at the Institute Mathildenhöhe in Darmstadt when Guerino was appointed as the executive director of the symmetry exhibition – a joint project of the town and the Technische Hochschule of Darmstadt. Of course, this project was momentous for Christina and Guerino, who were married on August 22, 1986, the last day of the symmetry exhibition.

But, without exaggerating, I would state that it was also momentous to the emergence of our society. On behalf of the board of our society, as well as all former IFM members, I wish to formally recognize Christina's tremendous contributions to, and solidarity with, our work and goals.

Thomas Noll

\* See Mazzola, Guerino (2004): "Short History of the IFM Association" in: Mazzola, Guerino, Thomas Noll and Emilio Lluís-Puebla (eds.) (2004): "Perspectives of Mathematical and Computational Music Theory". epOs-Music, Osnabrück.

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#### About Us

The Society for Mathematics and Computation in Music (SMCM) was founded in 2006 as an international forum for researchers and musicians working in the trans-disciplinary field at the intersection of music, mathematics and computation. The SMCM is registered in the USA. At its inaugural meeting in Berlin, on May 20, 2007, 13 board members were elected, from which were selected the officers for the society. The official website of the Society can be found at [www.smcm-net.info](http://www.smcm-net.info).

To become an accredited individual SMCM member, please visit our online registration form at [www.smcm-net.info/registration.html](http://www.smcm-net.info/registration.html). Membership includes a print subscription to the Journal of Mathematics and Music, the SMCM's official journal. For full information on the Journal of Mathematics and Music, a publication by Taylor & Francis, including manuscript submission instructions, library subscription options, details on free email alerting services, editorial board information and the online edition, please visit its homepage at [www.informaworld.com/JMM](http://www.informaworld.com/JMM) .