# NEWSLETTER

OF THE EUROPEAN MATHEMATICAL SOCIETY
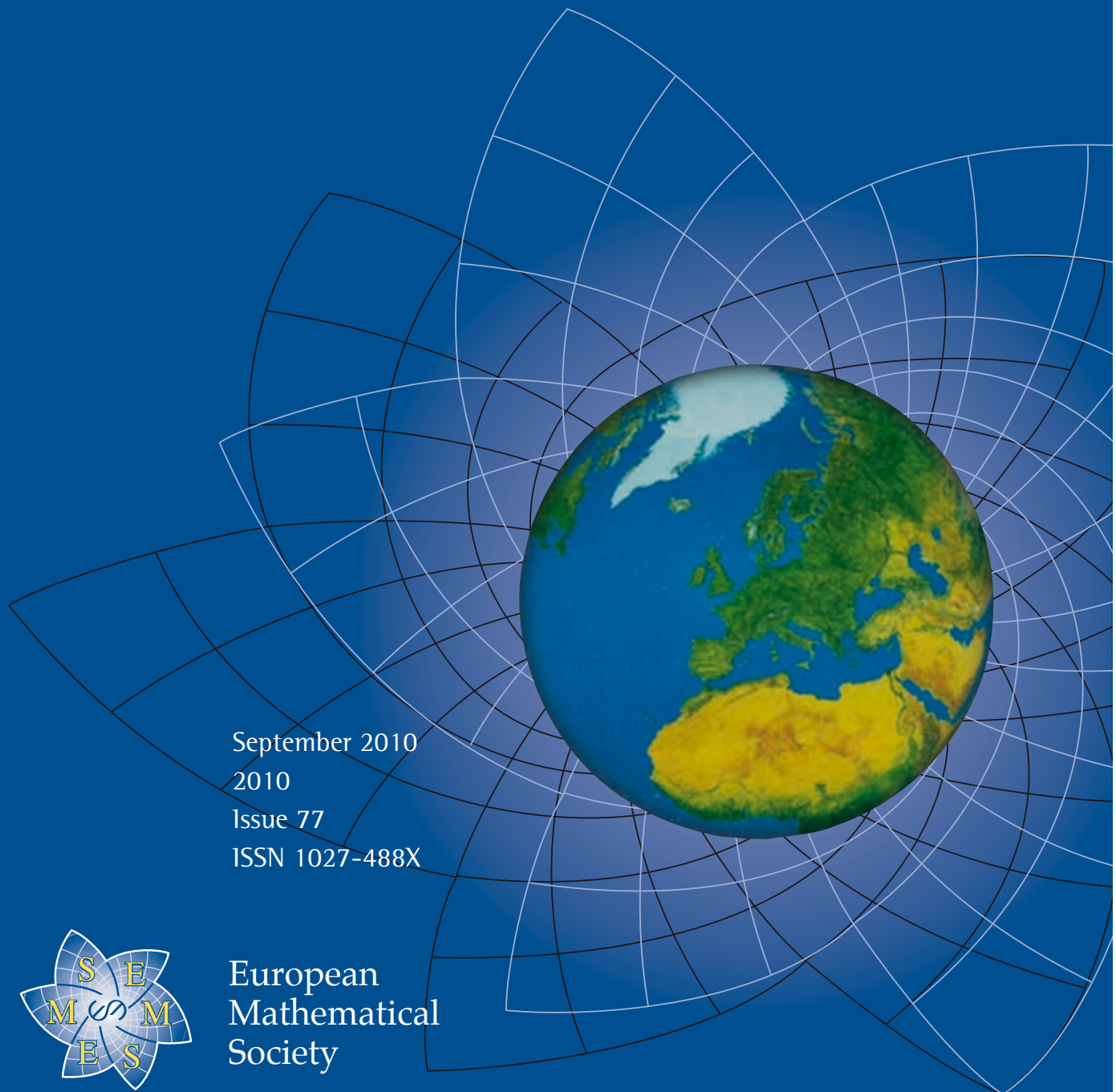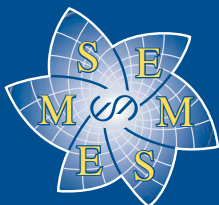
European
Mathematical
Society

Dr. Peter Fritzson (*Linköpings Universitet*)
Dr. Zhi Geng (*Peking University*)
Dr. Clovis Gonzaga (*Federal University of Santa Caterina*)
Dr. Matthew Hastings (*University of California at Santa Barbara*)
Dr. John Hogan (*University of Bristol*)
Dr. Philip Holmes (*Princeton University*)
Dr. Yoh Iwasa (*Kyushu University*)
Dr. Ron Kimmel (*Israel Institute of Technology*)
Dr. Shigeo Kusuoka (*University of Tokyo*)
Dr. Kerry Landman (*University of Melbourne*)
Dr. Mark Lewis (*University of Alberta*)
Dr. Christian Lubich (*Universität Tübingen*)
Dr. Alexander McNeil (*Heriot-Watt University*)
Dr. Benoit Perthame (*Université Pierre et Marie Curie*)
Dr. Benedetto Piccoli (*Consiglio Nazionale delle Ricerche*)
Dr. Pierre Sagaut (*Université Pierre et Marie Curie*)
Dr. Andrzej Świerniak (*Silesian Technical University – Politechnika Śląska*)
Dr. Rudiger Westermann (*Technische Universität München*)
Dr. Bin Yu (*University of California, Berkeley*)
Dr. Pingwen Zhang (*Peking University*)
Dr. Francis Zwiers (*Canadian Centre for Climate Modelling and Analysis*)

Deadlines to remember
- **18 August 2010**
  Early deadline for minisymposium proposals
  Online registration opens
- **17 September 2010**
  Early decisions announced for minisymposium proposals
- **4 October 2010**
  Final submission deadline for minisymposium proposals

- **29 October 2010**
  Final decisions announced for minisymposium proposals
- **15 December 2010**
  Submission deadline – accepted minisymposia abstracts
  Submission deadline – contributed paper abstracts
- **14 January 2011**
  Notifications sent to accepted contributed speakers
- **February/March 2011**
  ICIAM 2011 program posted online

Special Focus Themes
- Computational and Modeling Challenges in Industry
- Control Theory and Applications
- Design and Verification of Complex Systems
- Dynamical Systems and its Applications
- Economics and Finance
- Environmental Science, including Ocean, Atmosphere, and Climate
- Fluid Mechanics
- Graphics, Visualization, and Computation
- Image and Signal Processing
- Materials Science
- Mathematical Biology
- Mathematical Medicine and Physiology
- Mathematical Physics
- Mathematical Programming and Industrial Applications
- Molecular Simulation: Quantum and Classical
- Numerical Analysis
- ODE, PDE, and Applications
- Scientific Computing
- Solid Mechanics
- Statistical Sciences

Fine arts to the service of Mathematics

C. P. Bruter

Mathematics rarely receives positive media coverage. It almost feels like a concerted rejection by mainstream culture.

The reason for this rejection is partly a consequence of mathematicians' behaviour and the unique character of their cultural environment. Many in the profession live in a sheltered world, work uninterrupted on their favourite project and are subjected only to the pressure of their peers and the administrative structure that delivers advancement and recognition. The processes by which their work is developed and publicised obey rules that are replete with professional, well thought out virtues, yet the stiff formalism they generate shapes psychological attitudes.

If those rules developed upon years of practice are well adapted to the environment in which they are expressed, it is far from certain that they are suitable for the broader audience they could or should address. One has only to look at the existing student population to notice a serious educational shortcoming.

The failure to connect with younger generations is compounded by a failure to communicate and a lack of understanding between mathematicians and the public at large – the same public, who at a younger age, were often turned away from the mathematical world.

This serious issue is also affecting the majority – if not the totality – of the decision-makers in today's political, economic and cultural world.

It would be judicious and wise to re-establish contact and resume the dialog with Youth and the larger adult audience, based on trust, understanding and mutual intellectual respect.

But by what means can this be accomplished?

Among the many tools used in communication, fine art stands out for its consistency and effectiveness. Throughout history, architecture, sculpture, visual expression, poetry and music have been a vehicle for a larger aesthetic and existential discourse. It is through work of this nature that mankind has expressed itself again and again, with the most compelling depth, relevance and conviction.

The beauty of an aesthetic statement conveys an attractive power one contemplates, admires, understands and listens to, generation after generation. It reaches out to many. Its appreciation does not require an a priori intellectual undertaking, yet the message spreads so extensively and it subtly connects with its audience. Eventually it is assimilated to the core meaning of the display.

Visual expression, bound by the penetrating power of light, has always occupied a dominant place in communication. Could this approach be applied to the dialogue between mathematicians and the public? This question is all the more relevant because a fundamental part of mathematics is the description and representation of space – a field explored by many artists as well.

In the light of this opportunity, collaboration between mathematics and art could lead to a lowering of the psychological barrier that separates the mathematical community from the public at large.

The abundance of forms represented by mathematical objects in understated or more explicit artistic representations embodies mathematical science in many ways. It allows the artist to familiarise the public with its dissemination.

The abstract character of a mathematical demonstration may recede into the background. It may open to a more direct, tangible form of assertion that reaches to both the senses and the mind. Reticence toward mathematics may wane and the obstacles impeding mathematical discussion and exchange may be lowered.

Many professionals have already contributed to this approach as exemplified in the status of the 20 year old ARPAM (Association pour la Réalisation du Parc d'Activités Mathématiques), the homepage of the American Mathematical Society and the recent lecture of IHP director Cedric Villani at the Francois Mitterand National Library.

At the beginning of the year, mathematicians from several European countries joined together to coordinate attempts made in that direction and created a European Society for Mathematics and Art (ESMA*).

ESMA is the latest development of an effort that originated at the Maubeuge conference of 2000 and that has been sustained over the last 10 years by the ARPAM association. Its purpose is to promote communication between the scientific, mathematical and computer science community and the public at large through artistic means. The society facilitates the exchange of information and ideas through its website, publications, seminars and conferences, both locally and internationally.

The European Society for Mathematics and Art held its first conference at the Poincaré Institute in Paris July 19–22. A brief descriptive of the event is available in the August issue of the ESMA newsletter. (http://mathart.eu/)

Following its annual meeting, the Society set up several committees to develop further its activities in specific area of interest. The next Mathematic and Art conference will be organized and hosted by Dr. Konrad Polthier in Berlin in 2012.

ESMA organized an exhibit of mathematical art in conjunction with the conference. Numerous works from over 35 participants were shown on the ground-floor and in the library of the Poincare Institute. The exhibition, initially scheduled from June 7 to July 25 was extended to September 15 at the invitation of the Institute. The catalogue can be found on the ESMA site at: http://www.mathart.eu/ihp10/.

We hope that with your encouragement and support the European Society of Mathematics and Art will meet its objective and be of further service to the mathematical community.

Claude Paul Bruter [cpbruter@mathart. eu] is now a retired professor of mathematics from Paris 12 University. In his late mathematical work, he gave a generalisation for any dimension of the so-called fundamental theorem of algebra. He has written around ten books on various subjects, including mathematics and the history of mathematics. Involved in popularising mathematics through art, he founded the French association ARPAM and recently the European association ESMA.

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* More information on the events calendar & schedule can be found in the newsletter that appears on the ESMA website: http://www.mathart.eu.