WASCOM XVI – International Conference on Waves and Stability in Continuous Media

The *XVI* edition of the *International Conference on Waves and Stability in Continuous Media* took place in Brindisi (Italy), from June 12th to June 18th, 2011. Since its first edition organized in 1981 this meeting aimed at gathering Italian and foreign researchers interested in stability and wave propagation problems in continuous media. The topics of the meeting are today well known throughout the scientific community. These topics encompass different fields concerning wave propagation, stability problems and modeling problems such as acceleration and shock waves, diffusion processes in biology and in continuum mechanics, kinetics models, irreversible thermodynamics, stochastic processes, group methods, numerical techniques.

The previous conferences were organized in Catania (1981), Cosenza (1983), Bari (1985), Taormina (1987), Sorrento (1989), Acireale (1991), Bologna (1993), Palermo (1995), Bari (1997), Vulcano (1999), Porto Ercole (2001), Villasimius (2003), Acireale (2005), Scicli (2007), Mondello (2009).

The choice of Brindisi has been motivated by the effort that the *Università del Salento* is pursuing in the last years to change the former *Università di Lecce* in a modern institution spread in a beautiful, innovative and attractive region like Salento (the 'heel', in the traditional picture of the Italian peninsula as a 'boot'). This is the reason why the Rector Domenico Laforgia, besides being involved as chairmen of the opening ceremony of Wascom *XVI*, has given a strong financial support and has stimulated a strong connection between the conference and the City.

The venue of the morning session was the conference room of the *Museo Archeologico Provinciale Francesco Ribezzo* in the central *Piazza Duomo*. The venue of the afternoon sessions was *the Palazzo Granafei-Nervegna* where it is conserved one of the two pillars signaling the termination of the *via Appia*, the earliest and strategically most important Roman road: *Appia teritur regina longarum viarum*. Moreover, on June 14th in the Port Authority conference room Alessandra Celletti, from Università di Roma Tor Vergata, has delivered a wonderful public understanding conference about *Chaos and Stability in the Solar System*.

Wascom XVI has been a truly international conference, with 28 invited speakers from all over the world: only 9 of them were Italian. The videos of all

invited lectures are available at the web address `http://wascom.matematica.unisalento.it/Videos.html`. There have been 48 contributed talks and more than 90 people attending the conference. Moreover, two special sessions have been dedicated to the birthdays of professors Constantine Dafermos and Colin Rogers. These special session have been opened by the talks of Tai Ping Liu and Boris Konopelchenko respectively.

For the first time, the proceedings of this Wascom conference have been split in two parts. The mathematical interest of the Wascom conference was underlined by the director of the Dipartimento di Matematica, Diego Pallara, in his speech at the opening of the conference. For this reason, invited lectures are collected in this special issue of *Note di Matematica*, the home journal of the Università del Salento. We are sure that the scientific authoritativeness of the invited lecturers will give a very good opportunity of advertising *Note di Matematica* all around the world and for this reason we have chosen to collect in this volume the papers stemming from the invited talks with photo and other memorabilia of a very interesting conference in a wonderful venue.

The contributed talk, many of them delivered by young researchers, were of very high quality and it was truly important from the point of view of the scientific committee of the conference to ensure a suitable dissemination of the findings contained in such contributions. For this reason we have chosen to submit all the paper originated from these talks to a peer review process and to publish them as a special issue of the journal *Acta Applicandae Mathematicae*. We thank Laurent Desvilletes, editor in chief of Acta Applicandae Mathematicae and an invited speaker at this conference, for this opportunity.

We cannot end this introduction without acknowledging all the people that have helped the conference. The organizing committee (see below) has worked very hard for the success of this conference. The University of Salento has given financial support directly from the office of the Rector to help young people to attend the conference. The main part of financial support came from the Facoltà di Ingegneria Industriale through funds provided by the Provincia di Brindisi and Comune di Brindisi, and the Gruppo Nazionale di Fisica Matematica of the Istituto Nazionale di Alta Matematica `http://www.altamatematica.it`. The Dipartimento di Ingegneria dell'Innovazione of the Università del Salento also provided financial support. The Invited speakers were suported thanks to these three supporting institutions. Moreover, the whole financial support that we gathered allowed us to waive the conference fees to everybody. The Dipartimento di Matematica and Dipartimento di Fisica have offered to the conference the secretary Dr. D. Dell'Anna, the technical staff Dr. P. Santo, with contribution of Dr. F. Ricciardi (INFN, Section of Lecce), and the equipment. We think that, in a period of generalized grant reduction, we did our best to support the scientific

community around the WASCOM topics.

Finally, we would like to thank the people who created the WASCOM series of conferences turning into reality the idea that people working in waves and stability issues might meet every two years. The reason for a connection between wave motion and stability has a distinguished history in Mathematical Sciences going back to the 1903 celebrated theorem by the great French mathematician Jacques Hadamard. The history of WASCOM, all the scientific results and all the scientific collaborations that have stemmed from these meetings are the measure of the success of this conference and, in some sense, the modern delineation of Hadamard's theorem.

S. Rionero
University of Naples Federico II,
Department of Mathematics and Applications 'R. Caccioppoli',
Complesso Universitario Monte S. Angelo, Via Cinzia, 80126 Naples, Italy.
rionero@unina.it

T. Ruggeri
Department of Mathematics & Research Center of Applied Mathematics,
University of Bologna, Via Saragozza 8, 40123 Bologna, Italy.
tommaso.ruggeri@unibo.it

G. Saccomandi
Dipartimento di Ingegneria Industriale, Università degli Studi di Perugia
Via Duranti 1, 06125 Perugia
saccomandi@mec.dii.unipg.it

R. Vitolo
Dipartimento di Matematica e Fisica "E. De Giorgi", Università del Salento
Via per Arnesano, 73100 Lecce.
raffaele.vitolo@unisalento.it