

Preface

The Sixth European Congress of Mathematics (6 ECM) was held from July 2nd till July 7th, 2012 at the Auditorium Maximum of the Jagiellonian University in Kraków. It was organized by the Polish Mathematical Society (Polskie Towarzystwo Matematyczne, PTM) in collaboration with the Jagiellonian University (UJ), under the auspices of the European Mathematical Society (EMS). Previous European Congresses of Mathematics were held in Paris (1992), Budapest (1996), Barcelona (2000), Stockholm (2004) and Amsterdam (2008).

As at all the previous EMS congresses, ten young researchers selected by the Prize Committee nominated by the EMS received the EMS prizes in recognition of outstanding research accomplishments. Twenty years after the 1 ECM in Paris (1992), these prizes are considered to be one of the most prestigious awards for young talented mathematicians. A glance at the lists of all EMS prize winners and of the Fields Medal laureates confirms that view. In addition, the Felix Klein Prize was awarded for a third time, jointly by the EMS and the Institute for Industrial Mathematics in Kaiserslautern, for a remarkable solution of an industrial problem. Finally, for the first time the Otto Neugebauer Prize was awarded for a highly original and influential piece of work in the history of mathematics.

About 1000 mathematicians attended the congress and took part in the activities that consisted of 10 plenary lectures, 33 invited lectures, 3 special lectures and 11 lectures by the prize winners, complemented by 6 panel discussions and 24 minisymposia with 94 talks. 179 posters were presented, and 11 of them were awarded prizes, funded by the publishers presenting their products during the congress. Moreover, at the nearby AGH University of Science and Technology, 15 satellite thematic sessions were held with 155 talks. In total, almost half of the participants presented their results in some form. A variety of opportunities of presentations helped to increase participation in the 6 ECM. Finally, 29 satellite conferences of the 6 ECM have been organized.

These proceedings present extended versions of most of the invited talks which were delivered during the congress, or in one case submitted to the proceedings by the plenary speaker who couldn't come. A volume such as this one is always a specific snapshot, possibly somewhat biased but still worthwhile to look at, of the current state of mathematics; it tries to capture and show the most fashionable trends, crucial achievements, emerging new research directions, and – last but not least – the research leaders who shape the field. The organizers of 6 ECM and the editors of the proceedings thank all the authors who made an effort to prepare papers for this volume; we all do know that the free time necessary to complete such a task is a rare and precious commodity that one has to provide taking into account the never-ending heap of research, teaching, administrative and personal duties.

We are grateful for all the support we have obtained. All errors in that book are ours.

On behalf of the editors

Paweł Strzelecki