

Preface

The 7th European Congress of Mathematics (7ECM) took place July 18–22, 2016 in Berlin. With almost 1100 participants from 80 countries, it was one of the biggest European congresses so far. It was organized jointly by the DMV, the German Mathematical Society, and the GAMM, the International Association of Applied Mathematics and Mechanics, as well as by the Research Center MATHEON, the Einstein Center for Mathematics Berlin, and the Berlin Mathematical School, under the auspices of the European Mathematical Society (EMS) on the premises of TU Berlin. Previous European Congresses of Mathematics were held in Paris (1992), Budapest (1996), Barcelona (2000), Stockholm (2004), Amsterdam (2008), and Krakow (2012). The seventh European congress featured ten plenary lectures and thirty-one invited lectures. Furthermore, as in all previous European Congresses, ten young researchers selected by the Prize Committee nominated by the EMS received the EMS prizes, sponsored jointly by the Foundation *Compositio Mathematica* and the *European Mathematical Society Publishing House*. The prize winners presented their outstanding research accomplishments during the congress. In addition, for the fourth time the Felix Klein Prize, which is sponsored jointly by the EMS and the Institute for Industrial Mathematics in Kaiserslautern, was awarded for a remarkable solution of an industrial problem, and the Otto Neugebauer Prize, sponsored by Springer Verlag, was awarded for a highly original and influential piece of work in the history of mathematics.

For the first time in the history of the European congresses one of the Abel Laureates, Endre Szemerédi, presented the Abel Lecture. In honor of the first president of the EMS, the Friedrich Hirzebruch Lecture on *The Arithmetic and Topology of Differential Equations*, sponsored by DMV, was presented by Don Zagier. Peter Scholze, one of the ten plenary speakers and one of the EMS prize winners, gave an additional lecture for a broad audience, particularly directed towards high school students. Helmut Pottmann presented the public Lecture on *Mathematics in Modern Architecture*.

The proceedings volume at hand features extended versions of many of the plenary, invited, and prize talks which were presented during the congress. It shows the breadth and depth of current mathematical research in Europe and the exciting research developments that are currently taking place. The organizers of 7ECM and the editors of the proceedings thank all the authors who made an effort to prepare a paper for this volume.

The editors
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