

# Preface

The Eighth International Workshop on *Meshfree Methods for Partial Differential Equations* was held from September 7 to September 9, 2015, in Bonn, Germany. It was dedicated to the memory of Ted Belytschko, who passed away in September 2014. Ted Belytschko was one of the leading experts in meshfree methods and co-organized the workshop series over many years. He is dearly missed.

This workshop series was installed in 2001 to bring together European, American and Asian researchers working in this exciting field of interdisciplinary research on a regular basis. To this end, Ivo Babuška, Jiun-Shyan Chen, Michael Griebel, Antonio Huerta, Wing Kam Liu, Marc Alexander Schweitzer and Harry Yserentant invited scientist from all over the world to Bonn to strengthen the mathematical understanding and analysis of meshfree discretizations but also to promote the exchange of ideas on their implementation and application.

The workshop was again hosted by the Institut für Numerische Simulation at the Rheinische Friedrich-Wilhelms-Universität Bonn with the financial support of the Sonderforschungsbereich 1060 *The Mathematics of Emergent Effects* and the Hausdorff Center for Mathematics.

This volume of LNCSE now comprises selected contributions of attendees of the workshop. The selected papers cover a wide range of topics from applied mathematics to physics and engineering and even industrial applications which clearly indicates the maturity meshfree methods have reached in recent years. Meshfree methods have a diverse and rich mathematical background and their flexibility renders them particularly interesting for challenging applications in which classical mesh-based approximation techniques struggle or even fail.

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