

Preface

Probabilistic methods are currently of crucial importance for research and developments in the field of engineering, which is challenged by new materials and technologies and rapidly changing societal needs and values. Hence, the societal importance of risk and safety has significantly increased in the last decades. Contemporary needs related to, for example, performance-based design, service-life design, life cycle analysis, product optimization, assessment of existing structures, structural robustness, etc., still give rise to new developments in order to establish accurate and practically applicable probabilistic and statistical engineering methods to support these developments.

In 2003, a series of annual symposia or workshops has been established to provide a multidisciplinary forum for the exchange of knowledge and expertise in probabilistic methods, uncertainty quantification, safety and risk management, focusing on theory as well as practice and stimulating discussions on developments, and needs in this fascinating field of expertise.

Originally, the series started as the 1st and 2nd Dresdner Probabilistic Symposium in 2003 and 2004, respectively, which were launched to present research and applications that mainly dealt with at Dresden University of Technology. Since then, the series has grown to an internationally recognised conference dealing with research and applications of probabilistic techniques, mainly in the field of structural engineering.

After Dresden in 2003 and 2004, the International Probabilistic Workshop was organised in Vienna (2005), Berlin (2006), Ghent (2007), Darmstadt (2008), Delft (2009), Szczecin (2010), Braunschweig (2011), Stuttgart (2012), Brno (2013), Weimar (2014) and Liverpool (2015). For the first time, the workshop is now returning to a former location. From 5 to 7 December 2016, Ghent University will host the 14th edition of the International Probabilistic Workshop (IPW2016) once more in the beautiful city of Ghent, Belgium.

The proceedings of this 14th edition of the International Probabilistic Workshop include 36 papers, of which 2 are keynote papers, representing contributions from 14 countries. Overall, the papers relate to the following topics:

- Structural reliability methods and statistical approaches
- Probability and statistics
- Uncertainty quantification
- Uncertainty modelling
- Applied structural reliability analysis
- Risk analysis and optimization
- Probabilistic assessment of new and existing structures

The editors are grateful to all the contributing authors for their efforts and enthusiasm as well as to the Scientific Committee and the reviewers for safeguarding the quality of the Workshop's contributions.

We hope that this booklet can stimulate the research activities and interests into probabilistic applications and foster international cooperation in the field.

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