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Trends in Applications of Mathematics to Mechanics

 Springer

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Preface

Mechanics and Mathematics have a long history of mutual development. Across the centuries, mathematical formalism has imposed itself as the natural language of Mechanics. On the other hand, applications to Mechanics have constantly driven the progress of mathematical theories.

This volume originates from the INDAM *Symposium on Trends on Applications of Mathematics to Mechanics* (STAMM), which was held at the INDAM headquarters in Rome on 5–9 September 2016. STAMM is the biennial conference organized by the International Society for the Interaction of Mechanics and Mathematics (ISIMM), and the first meeting of this series dates back to 1975.

The book brings together original contributions at the interface of Mathematics and Mechanics. Consistently with the purpose of ISIMM, the focus is on mathematical models of phenomena issued from various applications. Among others, these include the following themes:

- Functional-analytic theories with applications to the Mechanics of Solids
- Modeling of nematic shells, thin films, dry friction, delamination, and damage
- Phase-field dynamics of Cahn-Hilliard type
- Thermodynamics of gases and continua

The papers in the volume, all of which have been refereed, present novel results and identify possible future developments.

We express our deep gratitude to all the authors and referees for their truly valuable commitment.

Pavia, Italy
Wien, Austria
Paris, France
Povo di Trento, Italy

Elisabetta Rocca
Ulisse Stefanelli
Lev Truskinovsky
Augusto Visintin

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