

Preface

Mechanics, one of the most ancient disciplines in the physical sciences, has long stood at the intersection of physics and mathematics. Its elegance and rigor have inspired some of the greatest scientific minds who recognized mechanics as a field of profound theoretical depth and limitless application.

Today, engineering mechanics not only honors that tradition but continues to shape a broad range of disciplines — from structural and fluid dynamics to biomechanics, mechanical properties of new advanced materials, thermomechanics, and systems engineering. Its role is vital not only in basic research but also as a bridge to innovation, industry, and applied science.

It is within this rich scientific context that the International Conference on Engineering Mechanics (EM) finds its lasting significance. Held annually since 1995 — and with historical origins reaching back to the 1960s — EM has grown into a central meeting point for the Czech and international mechanics community. Set in the tranquil Žďár Highlands, the conference brings together scientists, engineers, and students to share ideas, build collaborations, and present recent developments.

The EM conference is co-organized by three major institutions: the Institute of Theoretical and Applied Mechanics and the Institute of Thermomechanics of the Czech Academy of Sciences, and the Faculty of Mechanical Engineering at Brno University of Technology. Substantial support is provided by ŽDAS a.s., the Czech Society for Mechanics, and the Czech IFToMM Committee. This collaboration exemplifies the valuable synergy between academic research and industrial innovation.

A defining feature of the EM conference is its encouragement of lively scientific dialogue and interdisciplinary exchange. The contributions published in these proceedings represent work in progress, often stemming from ongoing research efforts, experimental campaigns, or theoretical modeling frameworks. These are not polished journal articles but rather living contributions that aim to provoke discussion, stimulate collaboration, and inspire further development. This dynamic and communicative nature of conference contributions is a critical form of scientific knowledge exchange — one that is sadly underappreciated or

misunderstood by bureaucratic systems and indexing services, which usually prioritize publication metrics over collaborative impact and intellectual engagement.

The conference proudly welcomes participants from all career stages and across disciplines. Particular emphasis is placed on young researchers, whose active involvement (often more than half of all speakers) ensures the field's renewal and vibrancy. EM is not only a platform for disseminating technical achievements but also a training ground where early-career scientists gain the experience and confidence necessary for engagement with larger international communities.

We extend our heartfelt thanks to all participants, speakers, and reviewers for their contributions, and to the dedicated organizers and Scientific Committee for their tireless work. Special recognition is due to ŽĎAS a.s., the conference's long-standing partner, whose collaboration dates back to the very inception of the EM series. Beyond their continuous support, ŽĎAS a.s. also plays a key role in recognizing and encouraging young researchers through the sponsorship of the annual poster competition awards. We also acknowledge the regular participation of Humusoft a.s., whose technical lectures and other contributions continue to support the conference program and its professional community.

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