

Preface

This issue of the Technische Mechanik contains selected contributions to the 7th Seminar of the activity group *Multiscale Material Modeling* of GAMM.

Within the context of actual issues involved in the design and optimization of engineering components, materials and processes at different length and time-scales, multiscale modeling methods are of great importance to both the industrial and academic sectors. For an optimal adjustment of the material and structural characteristics by means of controlled production and processing steps, a fundamental understanding of all mechanisms interacting on different length and time-scales in the materials considered is required. Both in theoretical and in computational material mechanics, considerable research work is still necessary in order to formulate the corresponding models and algorithms.

The 7th Seminar *Multiscale Material Modeling* was held at TU Dresden, Germany from June 20 to 21, 2013. The activity group *Multiscale Material Modeling* of the German Society for Applied Mechanics and Mathematics (GAMM) organized this seminar which was attended by 31 scientists representing 15 research institutions. Selected research work presented at the Seminar is documented in this volume.

The intention of the activity group *Multiscale Material Modeling*, currently being chaired by Holger Steeb (Ruhr-University Bochum, Germany) and Stefan Diebels (Saarland University, Germany), is to provide a forum for scientific interaction and cooperation in the area of multiscale modeling. Once a year, the activity group hosts a seminar.

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