

Multiscale Methods in Computational Mechanics

Progress and Accomplishments

This work gives a modern, up-to-date account of recent developments in computational multiscale mechanics. Both upscaling and concurrent computing methodologies will be addressed for a range of application areas in computational solid and fluid mechanics: Scale transitions in materials, turbulence in fluid-structure interaction problems, multiscale/multilevel optimization, multiscale poromechanics. A Dutch-German research group that consists of qualified and well-known researchers in the field has worked for six years on the topic of computational multiscale mechanics. This text provides a unique opportunity to consolidate and disseminate the knowledge gained in this project. The addition of chapters written by experts outside this working group provides a broad and multifaceted view of this rapidly evolving field.

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