

# Advances in Computational Mechanics

Einladung zum Vortrag

## SCALING UP MULTIPHYSICS

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As field solvers have matured over the last four decades, the amount of 'physics' in them has steadily increased. It is not uncommon to have, in a single run, and all linked together: flow solvers, embedded or immersed (possibly moving) structures, particles, chemical reactions, electromagnetics, and structural response.

The advent of machines with millions of cores has placed renewed interest in how best to migrate from the current 'scalar-pre, simple parallel solve, scalar-post' environment to a truly scalable simulation pipeline. Compared to simple field solvers (e.g. compressible flow), achieving a good load balance for complex multiphysics applications is not a trivial endeavour.

The talk will cover current developments in the areas of parallel grid generation, dynamic load balancing for multiphysics and parallel post-processing.

These developments will be exemplified on numerous blast-structure interaction cases.

**Montag, 15. Juli 2013**  
**TUM Exzellenzzentrum**  
**Boltzmannstr. 17, Garching**

**11:00 Uhr**  
**Seminarraum EG**

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