

IACM/ECCOMAS Congress 2008

Minisymposium Abstract

Title: Multi-scale modelling of material behaviour

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Code Session: 10

Introduction

Computational multiscale modelling is becoming recognised as a fundamental and realistic tool in the study of materials that are heterogeneous at the meso and/or microscale, and in the determination of their macroscopic properties and response. However, there are still significant challenges to be tackled in order to make multiscale modelling a sensible prospect for complex problems and large scale simulations.

Objectives

This minisymposium aims to provide a forum to discuss recent advances in multiscale modelling of material behaviour and to discuss future developments. This will be achieved by focussing the minisymposium on the following areas:

- Computational homogenization of elastic and inelastic material behaviour
- Modelling second-order effects, such as geometric size effect
- The application of multi-scale techniques for coupled problems
- Numerical strategies for the efficient use of multi-scale techniques in practice
- Validation and verification of computational multi-scale techniques