
Enriched Continuum Mechanics and Bridging Different Scales

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Abstract

This symposium aims at bringing together current knowledges concerning the bridging of different scales to incorporate the influence of microstructure on the macroscopic behavior of materials. Enriched continua (micromorphic, second gradient) are an example of homogenized media which intrinsically contain information related to the underlying microstructure. Such enriched model can be used to describe interesting microstructure-related phenomena both in the static (exotic material behaviors) and dynamic regime (cloaking, band-gaps, mechanical metamaterials). Contributions related to all other methods used to perform scale-bridging to unveil the statical or dynamical behavior of microstructured materials at scales which are large enough to be relevant for engineering science (e.g. homogenization, computational mechanics, ...) are also welcome.

Keywords: scale bridging, enriched continua, metamaterials, microstructure, homogenization, computational mechanics

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