

# Evolution Of Phase Transitions

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This work addresses development and application of continuum-mechanical models that describe the macroscopic response of certain materials. This 2006 work began with the author's exploration of the applicability of the finite deformation theory of elasticity when various standard assumptions such as convexity of various energies or ellipticity of the field equations of equilibrium are relinquished. The finite deformation theory of elasticity turns out to be a natural vehicle for the study of phase transitions in solids where thermal effects can be neglected. This text will be of interest to those interested in the development and application of continuum-mechanical models that describe the macroscopic response of materials capable of undergoing stress- or temperature-induced transitions between two solid phases. The focus is on the evolution of phase transitions which may be either dynamic or quasi-static, controlled by a kinetic relation which in the framework of classical thermomechanics represents information that is supplementary to the usual balance principles and constitutive laws of conventional theory. EAN/ISBN : 9780511166396 Publisher(s): Cambridge University Press Format: ePub/PDF Author(s): Abeyaratne, Rohan - Knowles, James K.

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