



## Continuum thermomechanics

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Bermúdez de Castro López Varela, Alfredo (1950-)

Birkhäuser Verlag,  
2005

Electronic books

Monografía

"The purpose of this textbook is to give a modern and unified approach to continuum mechanics and thermodynamics in a rigorous mathematical framework. The intended audience are students, researchers and engineers interested in these fields or in mathematical modelling and numerical simulation in solid and fluid mechanics, acoustics, heat transfer, chemistry, or combustion."--Jacket

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**Contenido:** 1.) General definitions, conservation laws -- 2.) Lagrangian coordinates -- 3.) Constitutive laws -- 4.) The principle of material frame-indifference -- 5.) Replacing entropy with temperature -- 6.) Isotropy -- 7.) Equations in Lagrangian coordinates -- 8.) Linearized models -- 9.) Quasi-static thermoelasticity -- 10.) Fluids -- 11.) Linearized models for fluids, acoustics -- 12.) Perfect gases -- 13.) Incompressible fluids -- 14.) Turbulent flow of incompressible Newtonian fluids -- 15.) Mixtures of Coleman-Noll fluids -- 16.) Chemical reactions in a stirred tank -- 17.) Chemical equilibrium of a reacting mixture of perfect gases in a stirred tank -- 18.) Flow of a mixture of reacting perfect gases

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