

# **Some gradient theories in linear visco-elastodynamics towards dispersion and attenuation of waves in relation to large-strain models**

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First, the standard viscoelastic rheologies of the Kelvin-Voigt, Maxwell's, and Jeffreys' types are analyzed in linear one-dimensional situations as far as the propagation of waves and their dispersion and attenuation. Then various spatial-gradient extensions are examined. These gradient extensions are then presented in the large-strain variants where they are sometimes used rather for purely analytical reasons either in the Lagrangian or the Eulerian formulations. The relation of such gradient viscoelastic models with propagation of waves is thus illuminated.

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