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Title

Longitudinal acoustic compliance and tagged particle susceptibility in liquid and supercooled glycerol

Source

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Abstract

Brillouin spectra of glycerol measured in the visible, ultraviolet and X-ray frequency regions allow us to reckon the imaginary part of acoustic compliance, $J''(\omega)$, over a broad frequency range from fraction of GHz to tens of THz. We observe that $J''(\omega)$ suitably mimic the shape of the tagged particle susceptibility, $\chi''(\omega)$, measured by incoherent neutron spectra for both the liquid and supercooled states. The proportionality between these two quantities suggests a strict relationship between acoustic dissipation and generalized density of states. [All rights reserved Elsevier]. (38 References).