223.Title: Longitudinal acoustic compliance and tagged particle susceptibility in liquid and supercooled glycerol

Author: Comez, L; Monaco, G; Masciovecchio, C; Paciaroni, A Gessini, A; Scarponi, F); Ruocco, G; Fioretto, D

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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"(INS)(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.