Università degli Studi di Trieste
Dipartimento di Fisica
Seminario

Maria Grazia Izzo

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July 30, 4.00 PM - Lecture room 204, Leonardo building, 2nd floor, Miramare Campus
Dip. di Fisica – Strada Costiera 11 – Trieste

Heterogeneous elasticity theory in the stochastic region tested on acoustic dynamics of a structurally heterogeneous ionic glass.

Stochastic description of topologically disordered media arises from the need to describe the effect of heterogeneous and undetermined structure of most real wave-transmitting media. It allows modeling the anomalous behavior of acoustic waves features observed in these systems with respect to predictions of Debye's theory, which instead fits for single-crystals behavior. Stochastic approach to quantitative description of acoustic waves anomalies has been mainly focused on the region of wavelengths larger than the characteristic length-scale of heterogeneities. In the present study we show that a similar approach can be extended up to shorter wavelengths, permitting to describe in a unified frame either the well-known low-frequency acoustic waves anomalies in Rayleigh regime and the mixing of longitudinal and transverse polarization in the stochastic region, experimentally observed in several glasses and predicted by general elasticity theory.
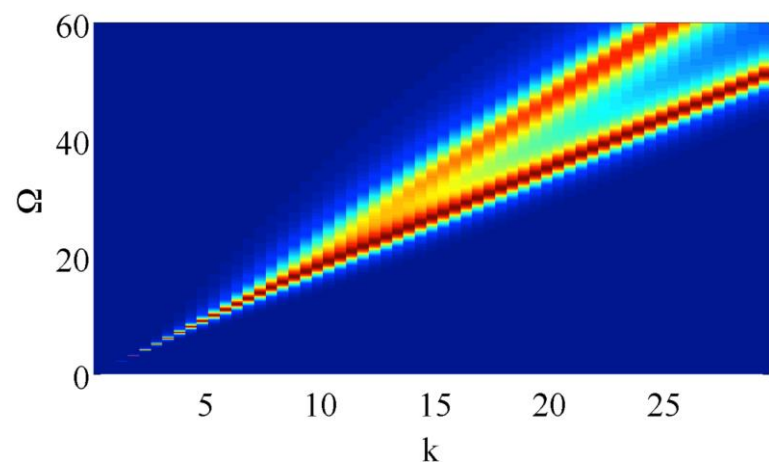
Model predictions are compared with acoustic waves features in ionic glass 1-octyl-3-methylimidazolium chloride, determined through high statistical accuracy and small wavevector-step Inelastic X-ray Scattering measurements.

Organizzazione a cura di: Prof. G. Pastore, Dr. E. Vesselli

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Everyone interested in the topic is welcome to attend

Informazioni: seminari@ts.infn.it