

Abstract Submitted
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Amended tunneling model to explain the anisotropy of the glassy properties of crystals and quasicrystals¹ DRAGOS-VICTOR ANGHEL, Horia Hulubei National Institute of Physics and Nuclear Engineering, DMITRY CHUROCHKIN, University of Chile — The low temperature acoustic and thermal properties of amorphous, glassy materials are remarkably similar and they can be explained to a large extent by assuming that the material contains a large number of dynamic defects. These dynamic defects are tunneling systems and are modeled by an ensemble of two-level systems (TLS). Crystals with defects—with a large enough amount of disorder—exhibit also glass-like properties, but these properties are not so universal and, even more, they are not isotropic. In Phys. Rev. B **75**, 064202 (2007) we proposed an amended model for the description of the interaction of two-level systems with arbitrary strain fields. Here we show how this model explains the anisotropy of the glass-like properties of disordered crystals and quasicrystals.

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