

Abstract Submitted
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Anisotropical glassy properties—a theoretical model¹ DRAGOS-VICTOR ANGHEL, Department of Theoretical Physics, Horia Hulubei National Institute of Physics and Nuclear Engineering, DMITRY CHUROCHKIN, R & D Institute “Volga” - Saratov 410052, Russia — We apply the model introduced in Phys. Rev. B **75**, 064202 (2007), to calculate the anisotropy effects in the interaction of two level systems with phonons and elastic waves in disordered crystals. In this model, the interaction strength depends on the orientation of the TLS with respect to the strain field through a 6×6 symmetric tensor of deformation potential parameters, $[R]$. The structure of $[R]$ is similar to the structure of the tensor of elastic stiffness constants, in the sense that they are determined by the same symmetry transformations. In this way, we emphasize the anisotropy of the interaction of elastic waves with the ensemble of two-level systems in disordered crystals. We also point to the fact that the ratio γ_l/γ_t has a much broader range of allowed values in disordered crystals than in isotropic solids.

Related publications:

- [1] D. V. Anghel and D. Churochkin, Europhys. Lett. **83**, 56004 (2008).
- [2] D. V. Anghel and D. Churochkin, Phys. Rev. B **78**, 094202 (2008).

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