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A Generic Microscopic Theory for the Universality of TTLS Meissner-Berret Ratio of Amorphous Solid DI ZHOU, ANTHONY LEGGETT, Univ of Illinois - Urbana — Tunneling-two-level-system (TTLS) has successfully explained several experimental results for amorphous solid which do not exist in crystalline counterparts. However longituinal and transverse phonon-TTLS coupling constants' ratio γ_l/γ_t has been found to lie between 1.5 and 1.6 for 13 different amorphous solids which cannot be explained within TTLS model. In this paper by developing an interacting generic block model with random stress tensors, we show the universality essentially comes from interaction between generic blocks, independent of the material's microscopic structure. In the appendix we also give a detailed correction for non-elastic stress-stress interaction coefficient $\Lambda_{ijkl}^{(ss')}$ derived by Joffrin and Levelut.

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