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Elastic measurements of TLSs in amorphous silicon at mK temperatures ANDREW FEFFERMAN, Institut Néel, CNRS and Université Grenoble Alpes, XIAO LIU, THOMAS METCALF, GLENN JERNIGAN, Naval Research Laboratory, EDDY COLLIN, Institut Néel, CNRS and Université Grenoble Alpes
— The low temperature properties of glass are distinct from those of crystals due to the presence of poorly understood low-energy excitations. These are usually thought to be atoms tunneling between nearby equilibria, forming tunneling two level systems (TLSs). Elastic measurements on amorphous silicon films deposited with e-beam evaporation showed that this material contains a variable density of TLSs that decreases as the growth temperature increases from 45 to 400 deg C [1]. We will present an analysis of the elastic properties of these films down to the low mK range in the framework of the standard tunneling model. [1] X. Liu, D. R. Queen, T. Metcalf, J. Karel and F. Hellman, Phys. Rev. Lett., 113, 025503 (2014)

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