Elastic measurements of TLSs in amorphous silicon at mK temperatures

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— 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)