# Origin of the Second Peak in the Mechanical Loss of Amorphous Silica

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The mechanical loss in amorphous oxides is the limiting factor for gravitational wave detectors and other high precision optical devices. Computational modeling that uses the two-level system (TLS) model can facilitate the search for coatings with lower internal friction. Here, we show advances in TLS modeling that improve the description of low temperature character of the internal friction. These methods applied to silica show much better agreement with experimental measurements of thin film silica, and show a second peak at ~150K. We discuss the origin of this second peak in terms of the TLS model and comment on how it impacts the search for materials with lower thermal loss.