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Wrinkling Instability in Nano-layers: Anisotropy and Sliding Effects

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Following an idea of Suo et al. we extend the linear stability analysis of a two-layer structure, intended to model the relaxation of a thin elastic film on a viscous layer, to account for both anisotropy of the elastic film and friction at the interface between the film and the substrate. The main appli-cation concerns the feasibility of strain relaxed InAsP and InGaAs compliant substrates. We compare our theoretical estimates for both the orientation and the wavelength of the periodic undulation of the film with experimental results obtained for In0:65Ga0:35As on a Si host via Apiezon wax.

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