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Title: Viscous surface waves with generalized surface energies.

Abstract: We study a three-dimensional incompressible viscous fluid in a horizontally periodic domain with finite depth whose free boundary is the graph of a function. The fluid is subject to gravity and generalized forces arising from a surface energy. The surface energy is a function of the local geometry of the surface which incorporates both bending and surface tension effects. For example, a typical energy of this type is the Willmore energy. We prove that for initial conditions sufficiently close to equilibrium the problem is globally well-posed and solutions decay to equilibrium exponentially fast, in an appropriate norm. Our proof is centered around a nonlinear energy method respectful of the geometry of the problem that is coupled to careful estimates of the fully nonlinear surface energy.