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Casimir force between inclusions in a strechable fluid membrane
HSIANG-KU LIN, ROYA ZANDI, LEONID PRYADKO, Department of Physics, University of California at Riverside — We calculate the entropic fluctuational force, a finite- temperature analogue of the Casimir force, between foreign inclusions in a strechable fluid membrane. Specifically, we consider the fluctuations of a planar membrane governed by the full Helfrich Hamiltonian, including the surface tension and both bending rigidity terms. The inclusions are introduced as circular regions where the surface tension and/or bending rigidities are modified from their values on the non-perturbed membrane. Results for arbitrarily-strong perturbations of the membrane, including holes, rigid disks, and edges will be presented.

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