

Abstract Submitted
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Shape transformations of active tubular membranes ELNAZ

ALIPOUR-ASSIABI, Department of Physics, Brown University, THOMAS POWERS, Division of Engineering, Brown University — Motivated by the action of enzymes that flip lipid molecules from one monolayer to another in a lipid bilayer membrane, we study shape instabilities of a tubular membrane driven by lipid-flipping. We begin with the instability of a tube with a fixed lipid number density distance, determining the relative importance of solvent viscosity, membrane viscosity, and bilayer friction. Then we consider the case of a uniform density of enzymes acting at a fixed rate. Implications for experiments will be discussed.

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