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**Lipid and Protein Sorting during Membrane Tube Formation**
HONGYUAN JIANG, THOMAS POWERS, Division of Engineering, Box D, Brown University, Providence, RI 02912 — Motivated by recent experiments that implicate the mechanical properties of membranes in lipid sorting, we examine the interplay of lipid composition and curvature in membrane tubes. We study how the dependence of bending stiffness and surface tension on membrane lipid and protein composition affects tube formation. Drawing a tube from a vesicle leads to a rearrangement of composition in which the phase of higher flexibility segregates in the tube, the region of high mean curvature. For point forcing, the force vs. extension curve can have a sharp drop just as the tube begins to form.

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