Abstract Submitted
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Bending of charged bilayer membranes[1] HAMMAD FAIZI, CODY REEVES, PETIA VLAHOVSKA, Northwestern University — Cells and internal cellular organelles are enveloped by membranes composed primarily of lipid bilayers. The bilayer bending rigidity (resistance to changes in curvature) plays a crucial role in cell deformations. We explore the effect of transmembrane potential on the bending rigidity. We experimentally analyze the dependence of bending rigidity on bilayer charge out of equilibrium due to charge accumulated near the membrane surfaces by an applied electric field. We measure the membrane bending modulus with three different techniques using the same giant unilamellar vesicle: equilibrium shape fluctuations, electrodeformation based on a frequency sweep, and shape fluctuations in the presence of uniform AC field

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