

Abstract Submitted  
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**Interaction measurement of particles bound to a lipid membrane**

RAPHAEL SARFATI, ERIC DUFRESNE, Yale University — The local shape and dynamics of the plasma membrane play important roles in many cellular processes. Local membrane deformations are often mediated by the adsorption of proteins (notably from the BAR family), and their subsequent self-assembly. The emerging hypothesis is that self-assembly arises from long-range interactions of individual proteins through the membrane's deformation field. We study these interactions in a model system of micron-sized colloidal particles adsorbed onto a lipid bilayer. We use fluorescent microscopy, optical tweezers and particle tracking to measure dissipative and conservative forces as a function of the separation between the particles. We find that particles are driven together with forces of order 100 fN and remain bound in a potential well with a stiffness of order 100 fN/micron.

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