

Abstract Submitted  
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**Modeling the dynamics of shape generation and sensing by proteins on lipid membranes**<sup>1</sup> NIKHIL WALANI, MARINO ARROYO, Univ Politecnica de Catalunya — Lipid membranes are fluid surfaces with flexural resistance that interact with proteins to perform their function in a biological context. A set of these proteins are responsible for shaping the lipid membranes, or of sensing curvature. A large body of work has examined the curvature sensing and generation properties of these proteins. Even though such processes are fundamentally dynamical in cells and in in vitro reconstituted systems, theoretical and computational studies have largely focussed on equilibrium thermodynamics. In this work, we propose a theoretical framework based on Onsager’s variational principle of irreversible thermodynamics that captures the dynamics of adsorption, diffusion, and shape generation or sensing of proteins on lipid surfaces.

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