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Energetics of interactions between protein inclusions in lipid bilayer membranes PAUL GOLDBART, MICHAEL DIMITRIYEV, Georgia Institute of Technology, ALEX LEVINE, University of California - Los Angeles — Proteins that are situated in cell membranes play vital roles in numerous cell functions. Examples include the enabling of the selective passage of ions or molecules into and out of cells, or the relaying of signals between cell interiors and their external environments. We develop a framework for understanding the energetics of the interactions that can arise between protein inclusions. We focus on the setting of inclusions in lipid bilayers and interactions that stem from the spatial overlap of the distortions induced by the inclusions in the orientational organization of the lipid molecules that constitute the bilayers.

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