

## **SPREADING OF BIO-ADHESIVE VESICLES ON DNA CARPETS**

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Polymers and membranes are the one and the two-dimensional archetypes of the soft objects that compose the colloidal world. Ubiquitous in the living realm and in many industry formulations, these fluctuating ropes and sheets display a fascinating behaviour that has inspired many developments at the forefront of present nanotechnology trends. Soft Condensed Matter objects such as those made from polymers and membranes are easily deformed by viscous, electric, magnetic or gravitational forces. They also exhibit thermal fluctuations. This susceptibility to weak forces provides many pathways for structuring and patterning a range of nanostructures from soft materials Here I will present recent theoretical and experimental progress in the understanding of membrane behaviour under polymer stress. I will first show theoretically what forces are expected when a polymer and a membrane are brought into interaction range, and compute the deformation of the membrane under polymer pressure. I will then present recent experimental progress from systems of phospholipid giant vesicles spread on a DNA carpet.