

SAIP2013



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Modelling the stability of a semiflexible network tethered to a membrane

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Abstract :

In red blood cells a network of spectrin is tethered to the outer membrane of the cell. We present a model for both the network and the membrane coupled to it. This enables the analysis of the coupled fluctuations, but also the development of criteria for the stability of the tethering and potential failure of the joined structures. We present a paradigm in which networks of stiff molecules can be described. The statistical mechanics theory takes into account the finite extent of the networks and the transmission of stresses into such networks from surfaces.

Award :

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