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Guided by curvature: the membrane shape coupled to cytoskeleton[1]

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We present theoretical models whereby the self-organization of cortical actin polymerization is controlled by curvature-sensitive protein complexes. In these systems the membrane is both shaped by the actin forces and curved membrane proteins, and in turn guides the cytoskeletal activity. This feedback is shown to give rise to membrane oscillations and waves in a number of different systems, and is compared to experimental observations of such waves.

[1]In collaboration with Moshe Naoz, Weizmann Institute of Science.