Michael Helmers (Oxford, UK)

Towards kinks in membranes with lateral phase separation.

Abstract. In the spontaneous curvature model for two-component lipid bilayers equilibrium shapes are described as closed surfaces minimizing the bending energy of each component plus an interface contribution. Although this energy does not enforce smoothness across interfaces, kinks are usually not included in the analysis. In the talk we consider the above model for rotationally symmetric membranes and a one-dimensional analogue when kinks are not excluded a priori. We introduce a family of energies for smooth curves and phase fields, and we study its sharp interface limit.