

# Variational Models for Pattern Formation in Biomembranes

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Biological membranes are thin structures that are composed of various components. The different components often form microdomains, called lipid rafts, that are arranged in complex patterns. To explain this pattern formation, variational models based on Cahn-Hilliard type energies have been introduced that couple the local composition of the membrane to its local curvature, which renders the resulting functionals nonlocal. The main focus of this talk lies on the derivation of the Gamma-limit in a certain parameter regime where the limiting functional turns out to be of perimeter-type. As a main novelty, we will present a technique to include Neumann-boundary conditions in the construction of a recovery sequence. Additionally, in the remaining parameter regimes scaling behavior of the infimal energy will be discussed.