



Minisymposium 26 - Mathematics in the Biosciences

Surface flow models for biomembranes

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We derive a thermodynamically consistent model for phase separation in multi-component vesicles. The model is a refinement of the classical Helfrich model and mathematically can be viewed as a Cahn-Hilliard like equation on an evolving surface, where the evolution is determined through a Willmore like flow. Numerical algorithms for this system of coupled 4th order equations are presented and first simulation results are shown.

This is joint work with Frank Haußer, John Lowengrub and Andreas Rätz.