PhD Colloquium

Katharina Brazda:

Biomembranes, curves, and varifolds

The equilibrium configurations of biological membranes, like the famous biconcave shapes of human red blood cells, can be modeled by minimizing the Canham-Helfrich elastic bending energy. In this talk, I will first introduce this quadratic curvature functional as well as its generalization to heterogeneous biomembranes, where shape couples to composition. Then I will discuss the 1D counterpart of the Canham-Helfrich model, namely elastic curves with modulated stiffness. Coming back to multiphase membranes, I will finally give you an idea about how the variational problem can be addressed with concepts of geometric measure theory, in particular, curvature varifolds.

June 23, 2022
1.15 to 2.00 pm

HS 15, Oskar-Morgenstern-Platz 1 & online

(for link pls contact office@vsmath.at)