

Applied Analysis Seminar

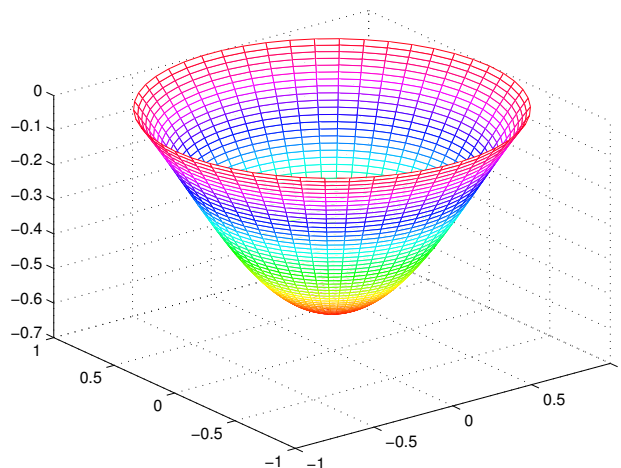
Thursday, November 24th
14:15, SR 9

Institut für Angewandte Mathematik
Mathematikon

On non-convex anisotropic surface energy regularized by the Willmore functional

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We regularize non-convex anisotropic surface energy of a two-dimensional surface, given as a graph over the two-dimensional unit disk, by the Willmore functional and investigate existence of the corresponding global minimizers. Restricting to the rotationally symmetric case, we obtain a one-dimensional variational problem which permits to derive substantial qualitative information on the minimizers. We show that minimizers tend to a “cone”-like solution as the regularization parameter tends to zero. Areas where the solutions are either convex or concave are identified. It turns out that the structure of the chosen anisotropy hardly affects the qualitative shape of the minimizers.

This is a joint work with Paola Pozzi.