



Minisymposium 11 - Geometrische Analysis

Minimizers of a generalized nonparametric area functional

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We consider the generalized nonparametric area functional

$$A(\zeta) := \int_{\Omega} \left(a(x, y, \zeta) \sqrt{1 + |\nabla \zeta|^2} + b(x, y, \zeta) \right) dx dy$$

for functions $a, b : \mathbb{R}^3 \rightarrow \mathbb{R}$ with $a > 0$. The Euler equation leads to a Dirichlet problem for graphs of prescribed mean curvature, where the mean curvature function depends on both the point in space as well as on the normal of the surface. Under certain assumptions on a and b we will solve the Dirichlet problem and thus construct minimizers of the functional A .