

Density lower bound estimate for local minimizers of free interface problem with volume constraint

10th, December

Abstract: We prove a density lower bound for some functionals involving bulk and interfacial energies. The bulk energies are convex functions with p -power growth not subjected to any further structure conditions. The interface ∂E is the boundary of a set $E \subset \Omega$ such that $|E| = d$ is prescribed. Then we get $\mathcal{H}^{n-1}((\partial E \setminus \partial E^*) \cup \Omega) = 0$. Where ∂E^* denotes the essential boundary of E where the distributional derivatives of 1_E is supported.