

Lipschitz Regularity for Asymptotically Convex Variational Problems

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Abstract

I will present global Lipschitz regularity results for minimizers of functionals with the general form

$$\mathbf{u} \mapsto \int_{\Omega} g(\mathbf{x}, \mathbf{u}(\mathbf{x}), \nabla \mathbf{u}(\mathbf{x})) \, d\mathbf{x}. \quad (1)$$

In addition to a growth condition, the function $\mathbf{F} \mapsto g(\mathbf{x}, \mathbf{u}, \mathbf{F})$ is assumed to behave like a rotationally symmetric convex function whenever $\|\mathbf{F}\|$ is sufficiently large. The regularity results are valid up to the boundary provided that the boundary data is sufficiently smooth. The work to be presented was done in collaboration with A. Passarelli di Napoli and A. Verde from Università di Napoli “Fredico II”.