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Abstract

For a bounded Lipschitz domain $\Omega \subset \mathbb{R}^n$ and a function $u_0 \in W^1_1(\Omega;\mathbb{R}^N)$ we consider the minimization problem

$$(\mathcal{P}) \qquad \int_\Omega f(\nabla u)\, dx \to \min \text{ in } u_0 + \overset{\circ}{W}{}^1_1(\Omega;\mathbb{R}^N)$$

where $f\colon \mathbb{R}^{nN} \to [0,\infty)$ is a strictly convex integrand. Let $\mathcal{M}$ denote the set of all L^1-cluster points of minimizing sequences of problem $(\mathcal{P})$. We show that the geometric relaxation of problem $(\mathcal{P})$ coincides with the relaxation based on the notion of the extended Lagrangian, moreover, we prove that the elements u of $\mathcal{M}$ are in one-to-one correspondence with the solutions of the relaxed problems.