ON A GENERALIZED EGNELL INEQUALITY

ADAMARIA PERROTTA

Abstract. In this paper we prove an inequality which connects the $L^p$ norm of the gradient of a function $u$ with its $|x|^{\nu} \cdot L^{p(N+\nu)\frac{p}{N-p}}$ norm and its $L^{p^*}$-weak norm. Here $1 < p < N$, $-p < \nu \leq 0$ and $p^* = \frac{Np}{N-p}$. As a consequence we can provide an alternative proof of the Egnell inequality in $\mathbb{R}^N$.


Keywords and phrases: Egnell inequality, one dimensional calculus of variations, isoperimetric inequality.

REFERENCES


