

# Some New Insights on the Maximum Principle

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**Abstract.** By establishing De Giorgi type level estimates for functions in  $W^{1,t}(\Omega)$ ,  $\Omega \subset \mathbb{R}^N$ , with  $t > N \geq 2$ , we prove a new Harnack type inequality for functions which do not necessarily belong to De Giorgi's classes, as obtained by Benedetto-Trudinger for function  $W^{1,p}(\Omega)$ ,  $p > 1$ . As a consequence, we prove the validity of the strong maximum principle for a class of uniformly elliptic operators of order greater than two in fairly general domains. (Joint work with D. Cassani).