## **BMO-type seminorms and Sobolev functions**

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A representation formula for the  $L^p$  norm of the gradient of a  $W^{1,p}$  - function is given, through the asymptotics of non local functionals. The approximation formula does not use distributional derivatives, but relies on certain *BMO*-type seminorms suggested by a paper of Ambrosio-Bourgain-Brezis and Figalli. The results are obtained in cooperations with N. Fusco and G. Moscariello.