1131-28-213   **Monica Torres*** (`torres@math.purdue.edu`), 150 N. University St., West Lafayette, IN 47907.
Gauss-Green formula for unbounded divergence-measure fields on open sets.

Divergence-measure fields naturally appear in the field of nonlinear hyperbolic conservation laws. We obtain a Gauss-Green formula for unbounded divergence-measure fields on arbitrary open sets and their closures. The method, based on the use of distance function, allows to define the normal trace of the field as the limit of classical normal traces over smooth approximations of the given set. In the particular case of open sets with continuous boundary, one can explicitly characterize the approximating smooth sets using a regularized distance introduced by Lieberman. In addition, we show that any open set with Lipschitz boundary has indeed a Lipschitz deformable boundary in the sense of Chen-Frid, and that there exists always a regular deformation. This a joint work with Giovanni Comi and Gui-Qiang Chen. (Received July 15, 2017)