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**Yuliya Gorb\*** ([gorb@math.uh.edu](mailto:gorb@math.uh.edu)), University of Houston, Department of Mathematics, PGH 636, Houston, TX 77204. *L-infinity estimates for gradients of solutions to some nonlinear problems*. Preliminary report.

In this talk a general framework allowing for L-infinity estimates for gradients of solutions to a class of nonlinear PDE problems will be described. The presentation of main results is given on a prototypical example based on the p-Laplacian and describing a composite material consisting of a matrix of finite conductivity with two injected perfectly conducting particles close to touching. The small distance between particles and high contrast in mechanical properties of composite constituents lead to localization of so-called high concentration zones where the gradient of the solution exhibits singular behavior. The main goal of the developed approach is to capture and characterize the blow up of the solution gradient which describes electric field of the two-phase composite. (Received September 22, 2010)