1125-26-2920 **Fernando Lopez Garcia*** (`fernando.lopezgarcia@ucr.edu`). *Weighted Korn inequality and solutions of the divergence on John domains.*

We show a weighted version of Korn inequality on bounded John domains, where the weights are nonnegative powers of the distance to the boundary. We also provide an estimate of the constant involved in the inequality which depends on the power that appears in the weight and a geometric condition on the domain. The proof uses a local-to-global argument based on a certain decomposition of functions.

In addition, we prove the solvability in weighted Sobolev spaces of div $\mathbf{u} = f$ on the same class of domains. This result is fundamental for the variational analysis of the Stokes equations. In this case, the weights are nonpositive powers of the distance to the boundary. The constant in this problem is also estimated. (Received September 20, 2016)

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