1030-35-30 **Monica Torres*** (torres@math.purdue.edu) and **Cong Phuc Nguyen** (pcnguyen@math.purdue.edu). *Removable singularities of divergence free vector fields and related equations with measure data.*

We study the solvability of the equation $divF = \mu$, with non-negative measure data μ, in the class of continuous or L^p vector fields F, where $1 \leq p \leq \infty$. We obtain explicit characterizations in terms of densities of μ for continuous and bounded vector fields, and in terms of potential energies of μ for L^p vector fields. These results allow us to characterize the removable singularities of the corresponding homogeneous equation $divF = 0$. (Received June 20, 2007)