1114-35-119 **Phuc Cong Nguyen*** (`pcnguyen@math.lsu.edu`), Department of Mathematics, Louisiana State University, 303 Lockett Hall, Baton Rouge, LA 70803, and **Cristi Guevara**. *Leray's self-similar solutions to the Navier–Stokes equations with low integrability profiles.*

We rule out the existence of Leray's backward self-similar solutions to the Navier–Stokes equations with profiles in $L^{12/5}(\mathbb{R}^3)$ or in the Marcinkiewicz space $L^{q,\infty}(\mathbb{R}^3)$ for $q \in (12/5, 6)$. This follows from a more general result formulated in terms of Morrey spaces and the first order Riesz's potential. It is also shown that $L_t^\infty(X)$ Leray–Hopf weak solutions to the three-dimensional Navier-Stokes equations are regular for certain spaces X strictly containing $L_x^3(\mathbb{R}^3)$. (Received August 18, 2015)