

1047-35-403

Chi Hin Chan* (cchan@math.utexas.edu), 1801 South Lakeshore Blvd Apt 275, Austin, TX 78741, and **Magdalena Czubak**. *Regularity of solutions for the critical N -dimensional Burgers' equation.*

We consider the fractional Burgers' equation on \mathbb{R}^N with the critical dissipation term. We follow the parabolic De-Giorgi's method of Caffarelli and Vasseur and show existence of smooth solutions given any initial datum in $L^2(\mathbb{R}^N)$.

The above paragraph is the actual abstract appearing in the joint paper of Chi Hin Chan and Magdalena Czubak. In this talk, we will talk about the way our work originates from the parabolic De-Giorgi's method developed by L. Caffarelli and A. Vasseur in their paper Drift diffusion equations with fractional diffusion and the quasi-geostrophic equation. (Received February 02, 2009)