Universidade Estadual de Campinas

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2D Navier-Stokes equation with cylindrical fractional Brownian noise

Abstract

We consider the Navier-Stokes equation on the 2D torus, with a stochastic forcing term which is a cylindrical fractional Wiener noise of Hurst parameter H. When $H = \frac{1}{2}$, there are results on global existence of a unique strong solution. We consider the case of a fractional Brownian motion, proving a local existence and uniqueness result when $\frac{7}{16} < H < \frac{1}{2}$ and a global existence and uniqueness result when $\frac{1}{2} < H < 1$. This is based on a joint work with C. Olivera.