

2D Navier-Stokes equation with cylindrical fractional Brownian noise.

Abstract

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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 . We prove a local existence and uniqueness result when $\frac{3}{8} < H < \frac{1}{2}$ and a global existence and uniqueness result when $\frac{1}{2} < H < 1$. The case $H = \frac{1}{2}$ has already been considered in the literature.