

Dynamics of stochastic non-Newtonian fluids driven by fractional Brownian motion with Hurst parameter $H \in (1/4, 1/2)$

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In this paper we consider the Stochastic isothermal, nonlinear, incompressible bipolar viscous fluids driven by a genuine cylindrical fractional Brownian motion with Hurst parameter $H \in (1/4, 1/2)$ under Dirichlet boundary condition on 2D square domain. First we prove the existence and regularity of the stochastic convolution corresponding to the stochastic non-Newtonian fluids. Then we obtain the existence and uniqueness results for the stochastic non-Newtonian fluids. Under certain condition, the random dynamical system generated by non-Newtonian fluids has a random attractor.

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