Stochastic Webinar

Flow-distribution dependent SDEs and Navier-Stokes equations with fractional Brownian motion

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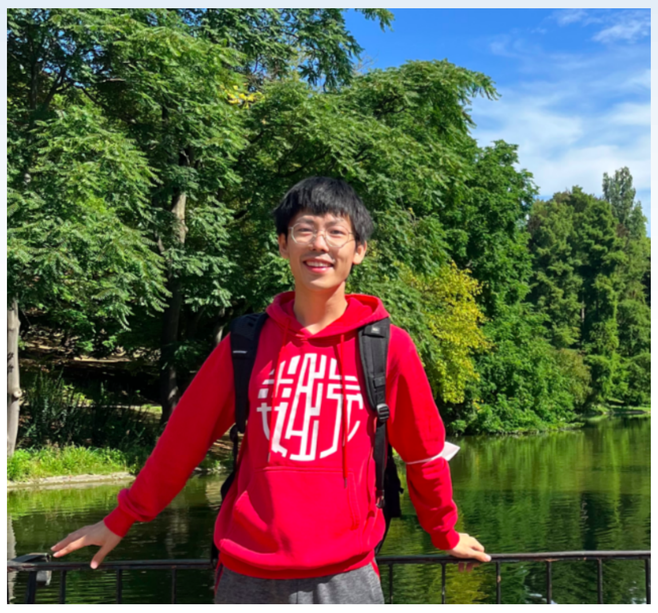
郝子墨于2023年博士毕业于武汉大学数学与统计学院和Bielefeld大学数学学院。现为Bielefeld大学博士后研究员。主要研究方向为奇异系数的SDE。



Abstract： Motivated by the probabilistic representation of the Navier-Stokes equations, we introduce a novel class of stochastic differential equations that depend on flow distribution. We establish the existence and uniqueness of both strong and weak solutions under one-sided Lipschitz conditions and singular drifts. These newly proposed flow-distribution dependent stochastic differential equations are closely connected to quasilinear backward Kolmogorov equations and forward Fokker-Planck equations. Furthermore, we investigate a stochastic version of the 2D-Navier-Stokes equation with fractional Brownian noise. We demonstrate the global wellposedness and smoothness of solutions when the Hurst parameter H lies in the range (0, 1/2) and the initial vorticity is a finite signed measure. This is a joint work with Michael Rockner and Xicheng Zhang.

讲座时间：
2024.05.29周三下午16:00-17:00
会议地点：ZOOM会议室会议ID：3541437366密码：123456

主办单位:
中科院数学与系统科学研究院应用数学所
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