

1132-76-20

**Kazuo Yamazaki\*** (kyamazak@ur.rochester.edu), Hylan 1017, Department of Mathematics, University of Rochester, Rochester, NY 14627. *Gibbsian dynamics and ergodicity of stochastic micropolar fluid system.*

The theory of micropolar fluids emphasizes the micro-structure of fluids by coupling the Navier-Stokes equations with micro-rotational velocity, and is widely viewed to be well fit, better than the Navier-Stokes equations, to describe fluids consisting of bar-like elements such as liquid crystals made up of dumbbell molecules or animal blood. We discuss the existence of a unique stationary measure for the stochastic micropolar fluid system with periodic boundary condition, forced by only the determining modes of the noise and therefore a type of finite-dimensionality of micropolar fluid flow.

The talk may touch also on other equations of fluid mechanics such as magnetohydrodynamics (MHD) system as well as MHD-Hall system. (Received June 19, 2017)