1142-35-20 **Kazuo Yamazaki***, Department of Mathematics, University of Rochester, Rochester, NY 14627.
Fluid dynamics PDE driven by random noise. Preliminary report.

The systems of equations to be discussed should include Navier-Stokes equations, magnetohydrodynamics system, Hall-magnetohydrodynamics system, potentially KPZ equations and more. It is worth noting that within this list, only the Hall-magnetohydrodynamics system is quasilinear while others are semilinear and thus naturally analysis on the Hall-magnetohydrodynamics system is in particular difficult.

The directions of research to be discussed should include well-posedness in case the noise is white in time, Markov selections, ergodicity, and the well-posedness in case the noise is white in both space and time. The last direction of research in particular requires techniques from renormalization and theories of rough path, regularity structures or paraproduct distributions. (Received August 03, 2018)