

STOCHASTIC (INTRINSIC) PDE

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Resumo/Abstract:

We present some results concerning stochastic linear transport equations and quasilinear scalar conservation laws, where the additive noise is a perturbation of the drift. Due to the introduction of the stochastic term, we may prove for instance well-posedness for continuity equation (divergence-free), Cauchy problem, meanwhile uniqueness may fail for the deterministic case, see [2]. Also for the transport equation, Dirichlet data, we established a better trace result by the introduction of the noise, see [3]. We introduce the study of stochastic hyperbolic conservation laws, in a different direction of [1], applying the kinetic-semigroup theory.

References:

- [1] P. L. Lions , P. Benoit, P. E. Souganidis *Scalar conservation laws with rough (stochastic) fluxes* , Stochastic Partial Differential Equations: Analysis and Computations , 1, 4, 664-686, 2013.
- [2] W. Neves, C .Olivera *Wellposedness for stochastic continuity equations with Ladyzhenskaya-Prodi-Serrin condition*, arXiv:1307.6484v1, 2013.
- [3] W. Neves, C .Olivera *Stochastic transport equation in bounded domains*, in preparation.

Joint work with: Christian Olivera (Universidade Estadual de Campinas).