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Stochastic conservation laws: some homogenisation and singular limit problems

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We compute some homogenization limits for stochastic conservation laws with oscillatory coefficients and multiplicative noise. Furthermore, we investigate a singular limit problem for stochastic conservation laws with discontinuous flux, perturbed by vanishing diffusion-dynamic capillarity terms. Our convergence arguments use stochastic two-scale Young measures, kinetic formulations, H-measures and velocity averaging for stochastic transport equations, and a.s. representations of random variables in quasi-Polish spaces.

This talk is based on joint works with H. Frid, D. Marroquin [1] and M. Kunzinger, D. Mitrovic [2].

References

[1] Hermano Frid, Kenneth H. Karlsen, and Daniel Marroquin. *Homogenization of stochastic conservation laws with multiplicative noise.* Submitted.

[2] Kenneth H. Karlsen, Michael Kunzinger, and Darko Mitrovic. *A dynamic capillarity equation with stochastic forcing on manifolds: a singular limit problem.* Submitted.

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