

Non-equilibrium fluctuations of interacting particle systems

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We introduce a new entropy estimate, which gives sharp bounds on the relative entropy of interacting particle systems with respect to reference measures chosen in a convenient way. As an application, we show that for a family of reaction-diffusion models and in dimensions lower than four, the scaling limit of the density fluctuations around its hydrodynamic limit is given by a inhomogeneous SPDE. Our entropy estimate holds regardless of the dimension and it can be of independent interest.

Joint work with Otávio Menezes, IST Lisbon.