Mathematics and CS Seminar

BPHZ Renormalisation in Regularity Structures via Spectral Gap

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A common thread in modern approaches to providing a solution theory to singular stochastic PDEs is that the probabilistic aspects of the problem are encoded in the construction of a random element of some nonlinear space of distributions. Once a realisation of this data is fixed, the remaining theory is then deterministic.In this talk, we will discuss this probabilistic aspect within the framework of regularity structures (where the nonlinear data is known as a “model”). In this setting, it is highly non-obvious that typical driving noises for singular SPDEs yield suitable models and it is typically the case that some renormalisation procedure is needed. The primary purpose of this talk will be to discuss a new approach to obtaining the necessary stochastic estimates which leverages as a core probabilistic assumption a spectral gap inequality for the driving noise of the equation. (Based on a joint work with Martin Hairer)

Wednesday, January 25, 2023 05:45pm - 07:00pm
Mondi 2, I01.01.008, Central Building

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