
Regularisation by noise in PDEs

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Abstract

We talk about good properties of bad functions. In the first part of the talk we review progresses in the analysis of situations where the presence of stochastic noise improves the theory of certain classes of PDEs. In the second part we propose a notion of *irregularity* for deterministic signals and use it to analyse the regularising effect of such signals on PDEs. In particular, in certain situations, we show in a quantitative way that the more the perturbation is irregular the more the properties of the equation are better. Examples include linear stochastic transport equations and non-linear modulated dispersive PDEs.

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