Conference Pathwise Stochastic Analysis and Applications
CIRM (Marseille, France) — March 8-12, 2021
Organized by GdR TRAG (INSMI-CNRS)

Nils Berglund (Université d'Orléans)

Renormalisation when approaching the subcriticality threshold: A simple example

We consider the fractional Φ^3_d model, which is an SPDE on the d- dimensional torus with fractional Laplacian and quadratic nonlinearity, providing a relatively simple example of the general theory of renormalisation of singular SPDEs. This model is subcritical, and thus amenable to the theory of regularity structures, if and only if the parameter ρ of the fractional Laplacian is larger than $d/3$. We use the general theory by Bruned, Chandra, Chevyrev, Hairer and Zambotti to derive explicit bounds on renormalisation counterterms as ρ approaches its critical value. No prior knowledge on singular SPDEs or regularity structures will be assumed in this talk.

Joint work with Yvain Bruned (Edinburgh),

Ref: `https://arxiv.org/abs/1907.13028`
