

Title Weak Universality for a class of nonlinear wave equations

Abstract: Motivated by recent progress on parabolic singular stochastic PDEs, we study the weak universality problem for a class of two-dimensional nonlinear wave equations with random initial data distributed according to fractional Gaussian fields. The model can be obtained by some suitable rescaling of weakly nonlinear wave equations on large boxes. We first establish a sufficient and almost necessary criteria for the convergence of invariant measures to the fractional  $\Phi_2^4$ . Then we establish the convergence result for the sequence of associated wave dynamics to a (renormalized) cubic equation. The proof is based on a variant of the Bourgain-Bulut type measure-invariant argument and dispersive estimates. This talk is based on a joint work with Nikolay Tzvetkov and Weijun Xu.