

ABSTRACT FOR THE OBERWOLFACH WORKSHOP ID 2221

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Over the last few years there has been spectacular progress in the study of parabolic SPDE, of nonlinear dispersive and wave equations and of probabilistic methods in PDE. An important direction gluing these three fields is the general question of how randomness affects the behavior of solutions to PDE. Such randomness often comes in one of two (different but closely related) ways: i) from the equation such as in parabolic stochastic problems with additive or multiplicative noise, ii) from the random initial data which obeys some canonical law of distribution such as in random data problem for dispersive equations. Research in recent years has been driven by the study of randomness in nonlinear evolution equations with a focus on the question of how to quantify the transport of such randomness under the nonlinear flow.

This workshop will be a venue where experts and junior researchers on nonlinear dispersive and wave equations (deterministic and nondeterministic), on nonlinear stochastic parabolic equations and on the intersections of these two major fields of research converge to discuss in a synergistic fashion recent results and explore the deep connections between approaches and the development of new integrative methods to tackle some of the challenging questions that remain unanswered in these fields.