

Probabilistic well-posedness of dispersive PDEs

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Abstract: In studying dispersive PDEs, one often encounters a threshold regularity (such as a scaling critical regularity) below which the equation is known to be ill-posed. In this talk, we discuss how one can use simple ideas from probability to go beyond the limit of deterministic analysis and construct local-in-time and global-in-time solutions below threshold regularities. We will discuss nonlinear Schrödinger equations and nonlinear wave equations as model examples.