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Convergence of densities for the stochastic heat equation

Consider the one-dimensional stochastic heat equation driven by a space-time white noise with constant initial condition. The purpose of this talk is to present a recent result on the uniform convergence of the density of the normalized spatial averages of the solution on an interval [-R,R], as R tends to infinity, to the density of the standard normal distribution, assuming some non-degeneracy and regularity conditions on the nonlinear coefficient σ . The proof is based on the combination of the techniques of Malliavin calculus with Stein's method for normal approximations.