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Large deviations for singular stochastic partial differential equations

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We consider SPDE's whose solutions are distribution-valued fields. An example is provided by the stochastic quantization of a scalar field in d=2,3 where infinite counter-terms are necessary. We review large deviation estimates for probabilistic weak solutions in d=2, derived long ago with P. K. Mitter, which show that the rate functional does not depend on the renormalization counter terms. We shall compare this result with a similar conclusion reached recently by Hairer and Weber in the context of Hairer regularity structures, which cover also the d=3 case.

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