THE ENERGY-DISSIPATION PRINCIPLE FOR STOCHASTIC PARABOLIC EQUATIONS

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Abstract.   The Energy-Dissipation Principle provides a variational tool for the analysis of parabolic evolution problems: solutions are characterized as so-called null-minimizers of a global functional on entire trajectories. This variational technique allows for applying the general results of the calculus of variations to the underlying differential problem and has been successfully applied in a variety of deterministic cases, ranging from doubly nonlinear flows to curves of maximal slope in metric spaces. The aim of this note is to extend the Energy-Dissipation Principle to stochastic parabolic evolution equations. Applications to stability and optimal control are also presented.