

Spectral theoretic methods for stochastic partial differential equations

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Strong regularity estimates are necessary to solve evolution equations and stochastic evolution equations via fixed point methods. We show, in the case of parabolic equations, that maximal regularity is (almost) equivalent to the boundedness of the holomorphic functional calculus of the defining partial differential operators. We present a short proof of this fact, which reduces the problem essentially to operator-theoretic arguments.

This talk is based on joint work with M. Veraar and J. Van Neerven.