Convergence rates for a finite volume scheme of the stochastic heat equation

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In this contribution, we provide convergence rates for a finite volume scheme of the stochastic heat equation with multiplicative Lipschitz noise and homogeneous Neumann boundary conditions (SHE). More precisely, we give an error estimate for the L^2-norm of the space-time discretization of SHE by a semi-implicit Euler scheme with respect to time and a TPFA scheme with respect to space and the variational solution of SHE. The only regularity assumptions additionally needed is spatial regularity of the initial datum and smoothness of the diffusive term.

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