Renormalized solutions for a stochastic p-Laplace equation with L^1-initial data

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We consider a p-Laplace evolution problem with stochastic forcing on a bounded domain $D \subset \mathbb{R}^d$ with homogeneous Dirichlet boundary conditions for $1 < p < \infty$. The additive noise term is given by a stochastic integral in the sense of Itô. The technical difficulties arise from the merely integrable random initial data under consideration. Due to the poor regularity of the initial data, estimates in $W_0^{1,p}(D)$ are available with respect to truncations of the solution only and therefore well-posedness results have to be formulated in the sense of generalized solutions. We extend the notion of renormalized solution for this type of SPDEs, show well-posedness in this setting and study the Markov properties of solutions.