

## **Regularization by noise and numerical approximation of stochastic Cahn-Hilliard type nonlinear equations**

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We consider the strong numerical approximation for a stochastic Cahn-Hilliard type nonlinear SPDE driven by space-time white noise on  $d$ -dimensional torus. We consider its full discretisation with a splitting scheme: a spectral Galerkin scheme in space and Euler scheme in time. We show the convergence with almost spatial rate  $\frac{1}{2}$  and  $\frac{1}{2}$ -temporal rate obtained mainly via "regularization by noise"-  
*stochastic sewing* technique.

This talk is based on joint work with Johannes Rimmel and Dirk Blömker (University of Augsburg) (arXiv:2501.18240).