STRONG CONVERGENCE OF A SPLITTING METHOD FOR THE STOCHASTIC COMPLEX GINZBURG-LANDAU EQUATION

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ABSTRACT. For numerical approximation of the stochastic complex Ginzburg-Landau equation with additive noise we consider a spectral discretization in space and a Lie-Trotter splitting method in time. Using properties of the corresponding semigroup and regularity of the noise, we will derive moment bounds and show strong convergence of the numerical on a set of arbitrarily large probability. Some numerical experiments are performed to illustrate the effectiveness of the method.