

Semidiscrete finite element approximation of the linear stochastic wave equation with additive noise is studied in a semigroup framework. Optimal error estimates for the deterministic problem are obtained under minimal regularity assumptions. These are used to prove strong and weak convergence estimates for the stochastic problem. The rate of weak convergence is found to be twice that of strong convergence under essentially the same regularity assumptions on the covariance operator of the Wiener process. The theory presented here applies to multi-dimensional domains and spatially correlated noise.