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*Regularity Properties and Propagation of Singularities of the Stochastic Wave Equation*

This talk is concerned with the regularity properties of the solution of the stochastic wave equation with additive Gaussian noise which is white in time and homogeneous in space. We show that the solution  $\{u(t, x), t \geq 0, x \in \mathbb{R}\}$ , as a Gaussian random field, has the property of sectorial local nondeterminism. Based on this property, we establish the exact uniform modulus of continuity for the solution.

We also study the problem of "propagation of singularities" for the solution  $\{u(t, x), t \geq 0, x \in \mathbb{R}\}$ . Our approach is based on a simultaneous law of the iterated logarithm and general methods for Gaussian processes.

This talk is based on joint papers with Cheuk-Yin Lee.