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619 Red Cedar Road, Department of Statistics and Probability, Michigan State University, East
Lansing, MI 48824. *Stochastic Solutions for fractional wave equations.*

A fractional wave equation replaces the second time derivative by a Caputo derivative of order between one and two. In this paper, we show that the fractional wave equation governs a stochastic model for wave propagation, with deterministic time replaced by the inverse of a stable subordinator whose index is one half the order of the fractional time derivative. (Received September 02, 2014)