

## Mathematical Physics

# Global Uniqueness for an Inverse Stochastic Hyperbolic Equation with Three Unknowns

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This paper is addressed to an inverse stochastic hyperbolic equation with three unknowns, i.e., a source term, an initial displacement and an initial velocity. The global uniqueness is proved by a new global Carleman estimate for the stochastic hyperbolic equation. It is found that both the formulation of stochastic inverse problems and the tools to solve them differ considerably from their deterministic counterpart.

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