

A sharpened Strichartz inequality for the wave equation

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In 2004, Foschi found the best constant, and the extremizing functions, for the Strichartz inequality for the wave equation with data in the Sobolev space $\dot{H}^{1/2} \times \dot{H}^{-1/2}(\mathbf{R}^3)$. We refine this inequality, by adding a term proportional to the distance of the initial data from the set of extremizers. Foschi also formulated a conjecture, concerning the extremizers to this Strichartz inequality in all spatial dimensions $d \geq 2$. We disprove such conjecture for even d , but we provide evidence to support it for odd d . The proofs use the conformal compactification of the Minkowski space-time given by the Penrose transform.

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