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Stability for solutions of the wave equation

Given a wave equation with nonsmooth metric, we consider the stable dependence of the solution on the metric. In particular, we show that the solution depends uniformly continuously on the metric in the $C^{1,1}$ class, when the Cauchy data is in the natural range of Sobolev spaces including endpoints. The proof is constructive and uses the wave packet approach to wave equations due to Hart Smith.