Global well-posedness for a quasilinear system of wave equations with a periodic direction

Annalaura STINGO

Abstract

We consider a system of quasilinear wave equations on the product space $\mathbb{R}^{1+3} \times \mathbb{S}^1$, which we see as a toy model for the Einstein equations with an additional compact dimension. We show global existence of solutions for small and regular initial data with some polynomial decay at infinity. The method we use here combines energy estimates on hyperboloids inside the light cone and weighted energy estimates outside the light cone.

This is joint work with C. Huneau (École Polytechnique and CNRS).