

Cécile HUNEAU

Stability of Minkowski Space-time with a translation space-like Killing vector field

In the presence of a translation symmetry, the 3+1 vacuum Einstein equations reduce to the 2+1 Einstein equations with a scalar field. We work in generalised wave coordinates. In this gauge Einstein equations can be written as a system of quasilinear quadratic wave equations. The main difficulty in proving global existence of solutions for small data is due to the weaker decay of free solutions to the wave equation in 2+1 dimensions, compared to 3+1 dimensions. This weak decay seems to be a deterrent for proving a stability result in the usual wave coordinates. In this talk we will present the construction of a suitable generalized wave gauge in which our system has a "cubic weak null structure", which allows for the proof of global existence.