Abstract

I will present a joint work with S. Klainerman and I. Rodnianski in which we give a new, fully anisotropic, criterion for formation of trapped surfaces in vacuum. More precisely we provide conditions on null data, concentrated in a neighborhood of a short null geodesic segment (possibly flat everywhere else) whose future development contains a trapped surface. This extends considerably the previous result of Christodoulou which required instead a uniform condition along all null geodesic generators.