

Seminar

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The stability of Minkowski space as a solution to the Einstein-Vlasov system

Friday, August 25, 2017

at 13:00 h

ESI, Boltzmann Lecture Hall

Abstract: Joint work with David Fajman (Vienna) and Jacques Smulevici (Orsay) (arXiv:1707.06141). We discuss in this talk the proof of the stability of Minkowski space as a solution to the Einstein-Vlasov system. This proof is based on the construction of appropriate commutators with the transport operator. This method is known as the modified vector field method, and was developed in earlier work by the same authors for the massive Vlasov-Nordström system. It is based on the approach by Klainerman for the wave equation. We work in the wave gauge and a hyperboloidal foliation similar to the work of LeFloch-Ma on the stability of Minkowski spacetime as a solution to the Einstein-Klein-Gordon system. In this talk, we focus on the commutation properties of the transport equation, and discuss in detail the structure of the commutation formula leading to the necessary decay estimates for the Vlasov field and their consequences for the analysis of the Einstein-Vlasov system.

P. Chruściel

August 9, 2017