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E I N L A D U N G

im Rahmen des Literaturseminars

zum Vortrag

von

Léo Bigorgne

(Orsay)

über

„Asymptotics properties of the small data solutions of the Vlasov-Maxwell system in high dimensions"

Abstract:

The Vlasov-Maxwell system is a classical model in plasma physics. Glassey-Strauss proved global existence for the small data solutions of this system under a compact support assumption on the initial data. They also established optimal decay rates for these solutions but not on their derivatives. We present here how vector field methods, developped by Christodoulou-Klainerman ([CK]) for the Maxwell equations (in 3d) and, more recently, by Fajman-Joudioux-Smulevici ([FJS]) for the Vlasov equation, can be applied to revisit this problem. In order to adapt the results of [CK] in high dimensions, and then obtain the optimal pointwise decay estimates on the null components of the electromagnetic field, we study the Vlasov-Maxwell system in the Lorenz gauge. We extend the techniques of [FJS] as we do not use a hyperboloidal foliation (and we then do not need any compact support assumption in space on the initial data) thanks to a new decay estimate for the velocity average of the Vlasov field. It allows us, by making crucial use of the null properties of the system, to remove all compact support assumptions on the initial data and to obtain optimal decay rates for the derivatives of the solutions. The work on the 3d case is in progress.

Zeit: Donnerstag, 19.4.2018, **14.00**
Ort: Arbeitsgruppe Gravitation, Währinger Straße 17, **Raum, 218,**
   2. Stock

gez.: P. Chrusciel, D. Fajman