Generic global solutions of the relativistic Vlasov-Maxwell system of plasma physics

G. Rein

The behaviour of classical solutions of the relativistic Vlasov-Maxwell system under small perturbations of the initial data is investigated. First it is shown that the solutions depend continuously on the initial data with respect to various norms. The main result is on global solutions: A global solution whose electromagnetic field decays in a certain way for large times is shown to remain global under small perturbations of the initial data and to retain the decay behaviour of the field. Therefore, such global solutions are generic. This result implies the existence of global solutions for nearly symmetric initial data.

Gerhard Rein (rein@rz.mathematik.uni-muenchen.de)