TEMPLE UNIVERSITY MATHEMATICS COLLOQUIUM

Robert Strain

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will speak on

New continuation criteria for the relativistic Vlasov-Maxwell System

ABSTRACT: We consider the relativistic Vlasov-Maxwell (VM) system with initial data of unrestricted size. We will begin with a substantial historical introduction to the problem.

In the 3D case, since the work of Glassey-Strauss in 1986, it has been known that as long as the $3D$ momentum support remains bounded then solutions can be continued and they will remain regular. We prove that as long as there exists a plane upon which the momentum support remains bounded then solutions can be continued and they will remain regular.

We will also extend the Glassey-Strauss continuation criterion for the VM system to initial data with unbounded initial momentum support. Moreover, by using moment bounds and Strichartz estimates, we will show that it suffices to assume the kinetic energy density to be in L^p for $p > 2$ in order to guarantee that the solution remains regular.

This talk is based on joint works with Jonathan Luk.

MONDAY, OCTOBER 20, 2014
LECTURE AT 4:00 PM
COFFEE, TEA, AND REFRESHMENTS FROM 3:40 PM
ROOM 617, WACHMAN HALL
DEPARTMENT OF MATHEMATICS