THE UNIVERSITY
of NORTH CAROLINA
at CHAPEL HILL

M. E. Taylor Analysis and PDE Seminar

February 21st
3:30 - 4:30 p.m.
Phillips Hall 385

On the global well-posedness of the Boltzmann hierarchy

Maja Taskovic (Emory University)

Abstract. The Boltzmann hierarchy is an infinite system of linear coupled equations that are instrumental for the rigorous derivation of the Boltzmann equation from many particles. In this talk we will show uniqueness of the mild solutions to the Boltzmann hierarchy by combining, for the first time, a combinatorial technique known as the Klainerman-Machedon board game argument together with an L^∞-based estimate. Then we will show existence of global in time mild solutions to the Boltzmann hierarchy for admissible initial data. The proof is constructive, and employs known global in time solutions to the Boltzmann equation via a Hewitt-Savage type theorem. The talk is based on a joint work with I. Ampatzoglou, J.K. Miller and N. Pavlović.