Mathematics, Statistics, and Computer Science **@ UIC**

Analysis and Applied Mathematics Seminar

A priori upper bounds for the inhomogeneous Landau equation

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Abstract: We consider the Landau equation, an integro-differential kinetic model from plasma physics that describes the evolution of a particle density in phase space. It arises as the limit of the Boltzmann equation when grazing collisions predominate. I will give an overview of prior work on the regularity theory of the Landau equation, and describe how to prove a priori upper bounds that decay polynomially in the velocity variable. The technical tools include precise bounds on the coefficients, and tracking how local estimates scale as the velocity grows. I will also explain why the polynomial decay cannot be improved to exponential decay. This talk is based on joint work with Stephen Cameron and Luis Silvestre.

Monday, February 27 at 4:00 PM in SEO 636