

ANALYSIS AND DIFFERENTIAL GEOMETRY
SEMINAR

Global existence for an isotropic Boltzmann-type model

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Abstract: The Boltzmann equation is a kinetic differential equation that plays a central role in thermal and statistical physics. Global existence for this equation is a challenging open problem, and in this talk, we will discuss a new model equation—called the "isotropic Boltzmann equation"—that is more tractable than the Boltzmann equation while still encapsulating many of the key mathematical difficulties. After briefly deriving the model equation, we will discuss the proof of global existence, which features a surprising application of a fractional Hardy inequality.

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MATHEMATICS
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