

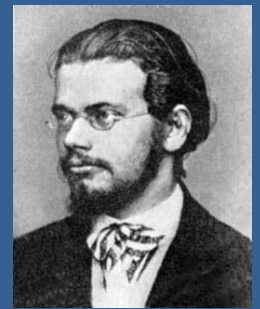
Institute for Analysis and Scientific Computing, and Doctoral Program "Dissipation and Dispersion in Nonlinear PDEs"

Course Announcement:

Kac's Model and the Propagation of Chaos

by
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Overview:

One of the most influential equation in the study of the kinetic theory of gases is the Boltzmann equation, describing the time evolution of an average particle in a dilute gas. While widely applicable, to this day there is no rigorous proof to the validity of the equation for all time. However, in 1956, Marc Kac suggested a probabilistic many particle model from which one can get a one dimensional version of the Boltzmann equation when looking at only one particle and taking the number of particles to infinity. In our short course we will discuss this model, and its associated concept

of 'chaos'. Our main goal will be to show the famous 'propagation of chaos' property.

Brief Syllabus:

- A brief review of the Boltzmann Equation.
- *Kac's model and the one particle limit.*
- *The notion of chaoticity and the its consequences.*
- *Propagation of Chaos.*

Location and times:

Monday to Thursday (24/1-29/1)
14:00-16:00 at Sem. R. DB gelb 03.