

# Seminar

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## Approximating gravitational collapse for dust with Vlasov matter

Wednesday, September 6, 2017

at 15:30 h

ESI, Boltzmann Lecture Hall

**Abstract:** In the seminal work by Oppenheimer and Snyder from 1939 it is shown that a homogeneous ball of dust undergoes gravitational collapse. I will present a result which shows that this gravitational collapse can be approximated arbitrary well by solutions to the Einstein-Vlasov system. Extensions of this result to the inhomogeneous case will also be discussed. In particular, there exist inhomogeneous data for dust which give rise to naked singularities and it is thus important to understand the relation between the dust solutions and the solutions to the Einstein-Vlasov system in the context of the weak cosmic censorship conjecture. This is a joint work with Gerhard Rein.

P. Chruściel

August 16, 2017