

Workshop on
“Geometric Transport Equations in General Relativity”

February 20 – 24, 2017

organized by

Håkan Andréasson (Chalmers & University of Gothenburg),
David Fajman (University of Vienna),
Jérémié Joudioux (University of Vienna)

All talks take place at the ESI, Boltzmann Lecture Hall.

• Monday, February 20, 2017

09:00 – 10:00 **Opening & Registration**

10:00 – 10:15 **Welcome word**

10:15 – 11:00 **Hans Ringström (KTH, Sweden)**

On the cosmic no-hair conjecture in the Einstein-Vlasov setting

11:00 – 11:30 *Coffee break*

11:30 – 12:15 **Ernesto Nungesser (Instituto de Ciencias Matemáticas, Spain)**

Self-similarity breaking of cosmological solutions with collisionless matter

12:15 – 14:45 *Lunch break*

14:45 – 15:30 **Mahir Hadžić (King’s College, U.K.)**

Nonlinear stability of expanding stars in the mass-critical Euler-Poisson system

15:30 – 16:00 *Coffee break*

16:00 – 16:45 **Carsten Gundlach (University of Southampton, U.K.)**

Static solutions of the spherically symmetric Einstein-Vlasov system and their perturbation spectrum

• Tuesday, February 21, 2017

09:30 – 10:15 **Philippe LeFloch (University Paris 6, France)**

Hyperboloidal foliations and self-gravitating massive fields

10:20 – 11:05 **Martin Taylor (Imperial College, U.K.)**

Global nonlinear stability of Minkowski space for the massless Einstein-Vlasov system

11:05 – 11:35 *Coffee break*

11:35 – 12:20 **Jacques Smulevici (University Paris Sud, France)**

Sharp asymptotics for small data solutions of the Vlasov-Nordström system in three dimensions

12:20 – 13:55 *Lunch break*

13:55 – 14:40 **Mihalis Dafermos (Cambridge, U.K.)**

On the Einstein-Vlasov system under surface symmetry

14:45 – 15:30 **Pieter Blue (Maxwell Institute for Mathematics & University of Edinburgh, U.K.)**

Decay of fields outside black holes: Massless Vlasov outside a very slow Kerr

15:30 – 16:00 *Coffee break*

16:00 – 16:45 **Olivier Sarbach (Universidad Michoacana de San Nicolas de Hidalgo, Mexico)**
Accretion of a relativistic collisionless kinetic gas into a Schwarzschild black hole

• **Wednesday, February 22, 2017**

09:30 – 10:15 **Ellery Ames (KTH, Sweden)**
Stationary Solutions to the Einstein-Vlasov System in Axisymmetry

10:20 – 11:05 **Chulmoon Yoo (University of Nagoya, Japan)**
3D simulation of Spindle Gravitational Collapse of a Collisionless Particle System

11:05 – 11:35 *Coffee break*

11:35 – 12:20 **Oliver Rinne (HTW Berlin / Albert Einstein Institute, Germany)**
Einstein-Vlasov evolution in axisymmetry

12:25 – 13:10 **Juan Velázquez (Hausdorff Center for Mathematics, Germany)**
Veiled singularities for the massless Einstein-Vlasov system

13:10 – 15:45 *Lunch break & free afternoon*

15:45 – 16:30 *Coffee Break*

19:30 **Conference dinner at the restaurant [das Kolin](#)**

• **Thursday, February 23, 2017**

10:00 – 10:45 **Paul Tod (Oxford Mathematical Institute, U.K.)**
Isotropic singularities in Einstein-Vlasov and Einstein-Boltzmann

10:45 – 11:15 *Coffee break*

11:15 – 12:00 **Ho Lee (Kyung Hee University, Korea)**
Late time behaviour of Israel particles in a FLRW spacetime with $\Lambda > 0$

12:00 – 14:30 *Lunch break*

14:30 – 15:15 **Jonathan Luk (Stanford University, U.S.)**
High frequency limits in general relativity

15:20 – 16:05 **Mohammed Lemou (IRMAR, France)**
Extended rearrangement inequality and quantitative orbital stability for gravitational Vlasov-Poisson and HMF models

16:05 – 16:35 *Coffee break*

17:00 – 18:00 **Mihalis Dafermos (Cambridge, U.K.)**
Erwin Schrödinger Lecture: On falling into black holes

• **Friday, February 24, 2017**

09:30 – 10:15 **Jean Dolbeault (CEREMADE, France)**
On a result of symmetry based on nonlinear flows

10:20 – 11:05 **Maximilian Thaller (Chalmers, Sweden)**
On static solutions of the Einstein-Vlasov system

11:05 – 11:35 *Coffee break*

11:35 – 12:20 **Gerhard Rein (University of Bayreuth, Germany)**
Gravitational collapse - dust versus Vlasov