

Speaker: Alexandre Lanar (Boritchev)

Title: *Aggregation-diffusion equations: concentration and small-scale behaviour*

Abstract:

Aggregation-diffusion equations are involved in modelling many phenomena, in particular in astrophysics and in biology (chemotaxis). The most well-known example is the one of the Keller-Segel (KS) system.

Here we consider a class of KS-type models with solutions which explode in the zero-diffusion limit. We characterise in a sharp way their behaviour (concentration, Lebesgue norms) in the small-diffusion regime in the radially symmetric case. We will compare our results with previous analogous ones for scalar conservation laws.

The research has been done in collaboration with P. Biler, G. Karch (Wrocław) and P. Laurençot (Toulouse).

REFERENCES

- [1] P. Biler, A. Boritchev, G. Karch, P. Laurençot. Concentration phenomena in a diffusive aggregation model. Preprint, arXiv:2001.06218v1, 2020.
- [2] P. Biler, A. Boritchev, G. Karch, P. Laurençot. Sharp Sobolev estimates for concentration of solutions to an aggregation-diffusion equation. Preprint, arXiv:2009.12173v1, 2020.