

# Summer School

## Particle systems and PDEs

Part of Thematic Semester  
« Interacting particles,  
PDEs and applications »



Graduate School

Mathematics and Interactions in Toulouse



June 2026,  
15-19



IMT- Amphi. Schwartz  
France



### Local organizers

Marina Ferreira,  
Pierre Gervais,  
Bastien Mallein,  
Elvire Jalran



### Scientific committee

Clément Erignoux (Lyon),  
Patrícia Gonçalves (Lisbon),  
Ana Jacinta Soares (Minho)

### > Program

This summer school introduces fundamental analytical and probabilistic tools used in current research on particle systems. It is primarily aimed at Master's and PhD students, postdoctoral researchers, and early-career researchers interested in these topics and their connections.

### > Mini-courses

**Luisa Andreis (Università degli Studi di Torino)**

Stochastic models for coagulation processes, large scale limits and phase transitions

**Francis Filbet (Université de Toulouse)**

An introduction to mean field kinetic equations

**Jani Lukkarinen (University of Helsinki)**

Cumulants, their evolution hierarchies, and how to use them to control chaos for kinetic theory

**Pascal Maillard (Université de Toulouse)**

Local and global survival of spatial branching processes and generalized principal eigenvalues



<https://indico.math.cnrs.fr/event/14446/>

