

## **Exit problem of particles interacting with their empirical law**

*Julian Tugaut, Bielefeld*

*Abstract:*

The mean-field interacting particles system models models various phenomena. Let us mention two: the social interactions and the interconnectivity of the neurons. We consider a large number of particles which collide inelastically in a random medium. The momentum is conserved and the kinetic energy dissipates. The hydrodynamic limit yields to the McKean-Vlasov diffusion. The aim of the talk is to solve the exit problem of the first particle from a bounded domain as the number of diffusions goes to infinity. Some ideas to solve the exit problem of the McKean-Vlasov diffusion will also be given.