



# SEMINÁRIO DE EQUAÇÕES DIFERENCIAIS

## Quantitative convergence of particle systems to the viscous Burgers and Keller-Segel equations

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**Resumo:** In this talk, I will first present a convergence result for systems of particles with moderate interaction, which interact through locally integrable kernels, such as the Keller-Segel kernel arising from chemotaxis models. We will show a convergence rate towards the PDE, as well as a propagation of chaos result.

Next, we focus on a particle system converging to the viscous Burgers equation. Formally, particles must interact pairwise through a Dirac distribution. In practice, we regularize this interaction to obtain particles with moderate interaction, following the Oelschläger approach. We achieve a convergence rate of the regularized empirical measure of the system towards the solution of the Burgers PDE, in a Bessel norm, and deduce a convergence of the empirical measure in Wasserstein distance.

Work in collaboration with C. Olivera (Unicamp) and M. Tomasevic (Polytechnique).