Kinetic equations and turbulence

A duality method for mean-field limits with singular interactions

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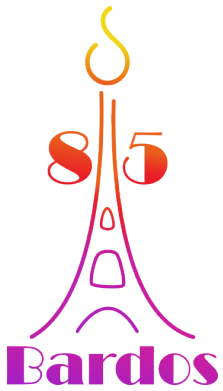
The justification of the Vlasov-Poisson equation as the mean-field limit for a system of classical particles with Coulomb interactions remains a major open problem in mathematical physics. In this talk, we present a new approach, based on a duality argument combined with a hierarchical analysis of dual correlations. This allows us to cover for the first time arbitrary square-integrable interaction forces at zero temperature, and also provides convergence rates. This talk is based on joint work with Didier Bresch and Pierre-Emmanuel Jabin.



In honor of Claude Bardos's 85th birthday