

Large systems of interacting points at equilibrium in the plane

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Abstract

In this talk I will consider equilibrium solutions of a system of ODEs describing N points interacting via a Coulomb potential in the plane. When N is large we expect the limit of the empirical measure of the positions of the points to satisfy a system of PDEs. I will describe the difficulties to understand the limit N goes to infinity (transform the equilibrium relations into a non-linear PDE and pass to the limit in this PDE) and explain how we can solve them to obtain the result.