

José A. Carrillo
Imperial College London

Minimizing interaction energies

I will start by reviewing some recent results on qualitative properties of local minimizers of the interaction energies to motivate the main topic of my talk: to discuss global minimizers. We will show the existence of compactly supported global minimizers under quite mild assumptions on the potential in the complementary set of classical H-stability in statistical mechanics. A strong connection with the classical obstacle problem appears very useful when the singularity is strong enough at zero. I will also discuss recent results in the theory of dislocations where two dimensional densities are reduced to one dimensional densities for non radially symmetric potentials.