



IWR-Colloquium Summer Term 2017

May 5, 2017 / 14:15h

Mathematikon, Conference Room / 5th Floor
Im Neuenheimer Feld 205, 69120 Heidelberg

Speaker:

Prof. José A. Carrillo de la Plata • Imperial College London, UK

Title:

"Swarming, Interaction Energies and PDEs"

Abstract:

I will present a survey of the main results about first and second order models of swarming where repulsion and attraction are modeled through pairwise potentials. We will mainly focus on the stability of the fascinating patterns that you get by random particle simulations, flocks and mills, and their qualitative behavior. Qualitative properties of local minimizers of the interaction energies are crucial in order to understand these complex behaviors. Compactly supported global minimizers determine the flock patterns whose existence is related to the classical H-stability in statistical mechanics and the classical obstacle problem for differential operators.

Website Carrillo de la Plata:

http://www.imperial.ac.uk/people/carrillo

Website IWR-Colloquium:

www.iwr.uni-heidelberg.de/iwr-colloguium