

MAST Lecture Series

Mathematics, Science and Technology



SPEAKER

Sylvia Serfaty

VENUE

University of Luxembourg
Belval Campus
MSA 3.110

TIME AND DATE

16:10 - 17:00
January 22nd, 2019

There will be drinks and snacks
after the talk.



Systems of points with Coulomb interactions

Large ensembles of points with Coulomb interactions arise in various settings of condensed matter physics, classical and quantum mechanics, statistical mechanics, random matrices and even approximation theory, and they give rise to a variety of questions pertaining to analysis, Partial Differential Equations and probability. We will first review these motivations, then present the “mean-field” derivation of effective models and equations describing the system at the macroscopic scale. We then explain how to analyze the next order behavior, giving information on the configurations at the microscopic level and connecting with crystallization questions, and finish with the description of the effect of temperature.



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