

Kinetic Monte Carlo

CECAM tutorial 14.10–17.10.2002

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October 9, 2002

Programme

Monday, 14.10.2002

9:00 – 10:30 W. Paul:

The stochastic processes background of kinetic Monte Carlo

10:30 – 11:00 break

11:00 – 12:30 W. Paul:

From the double-well to the egg-tray potential

12:30 – 14:00 lunch

14:00 – 15:00 short presentation of the participants' projects

15:00 – 18:00 practical session: one-dimensional random walks

Tuesday, 15.10.2002

9:00 – 10:30 W. Paul:

Application: kinetic Ising model

10:30 – 11:00 break

11:00 – 12:30 W. Paul:

Application: kinetic Monte Carlo of a lattice polymer melt

12:30 – 14:00 lunch

14:00 – 18:00 practical session: kinetics of first order phase transitions within the Ising model

Wednesday, 16.10.2002

9:00 – 10:30 P. Kratzer:

Applications of kinetics in surface science and epitaxial growth simulations

10:30 – 11:00 break

11:00 – 12:30 P. Kratzer:

The atomistic perspective: role of density functional calculations

12:30 – 14:00 lunch

14:00 – 15:00 P. Kratzer:

Remarks about the implementation of kinetic Monte Carlo in C/C++

15:00 – 18:00 practical session: simulation of island distributions in sub-monolayer deposition

Thursday, 15.10.2002

9:00 – 10:30 C. Bennemann:

Introduction to modeling of financial markets: the Black–Scholes framework

10:30 – 11:00 break

11:00 – 12:30 C. Bennemann:

Application of Monte Carlo simulations to financial contracts, the value-at-risk approach

12:30 – 14:00 lunch

14:00 – 17:00 practical session: evaluation of complex derivative contracts and value-at-risk calculations