Институт по Информационни и Комуникационни Технологии –БАН

Научен семинар по

Паралелни алгоритми и научни пресмятания

На 27.11 г. (вторник) от 14 часа в зала 218 на бл. 25а на ИИКТ- БАН

Жан Мишел Селиер ще изнесе доклад на тема:

A Monte Carlo technique for the Wigner-Boltzmann equation

Абстракт. The semiconductor field is facing very challenging problems due to the extreme miniaturization of devices. New models and numerical approaches are required to simulate the quantum effects which are dominant in today nanoscale devices. At the same time, it is of paramount importance to have a model that keeps the effects of the scattering which is very important at room temperature. Today, one has two main approaches to simulate electron transport in semiconductor devices. One can predict the scattering effects (Monte Carlo method applied to Boltzmann equation) and the other one is able to predict the quantum effects (deterministic approaches to quantum models). So far, there is no simulator/technique that can deal with both effects in an effective way. In this talk, Dr. Sellier will present a Monte Carlo technique for the Wigner-Boltzmann model and show that it is able to take into account all relevant phenomena while being still numerically tractable. He will also present some preliminary results that encourages the further development of the theory and technique. He will conclude by showing the similarities between the semi-classical Monte Carlo technique applied to the Boltzmann equation and the new technique applied to the Wigner equation.