

Seminario

Centro de Modelamiento Matemático

Expositor

Benoit Crespin

Univeristé de Limoges – CNRS

Francia

Title

Particles-based simulations and GPU computing for soft matter science and computer graphics applications

Summary:

Particle-based simulation codes used in soft matter science aim at represent the interactions that occur in colloidal suspensions at nanoscale level. These suspensions are a mixture of solid particles of diameter between 100 and 1000 nanometers and a solvent (usually water), all interacting with each other. The main goal when implementing these codes on the GPU is to accelerate the "particle neighbour searching" phase, which is the bottleneck in most lagrangian-based simulations. I will present recent results obtained for Brownian Dynamics, where the solvent is not modeled, and Stochastic Rotation Dynamics which attempts to represent interactions with the water volume. This latter model can also be considered for applications used in Computer Graphics where the goal is to obtain real-time simulations, to represent for example virtual, controllable breaking waves.

Jueves 25 de octubre del 2018 a las 16:00 hrs, Sala de Seminarios John Von Neumann CMM, séptimo piso, torre norte de Beauchef 851.