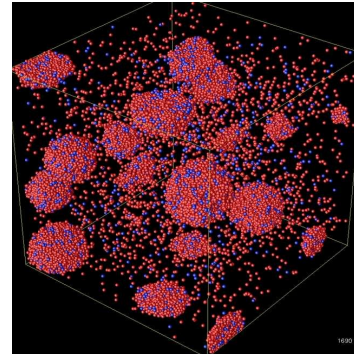
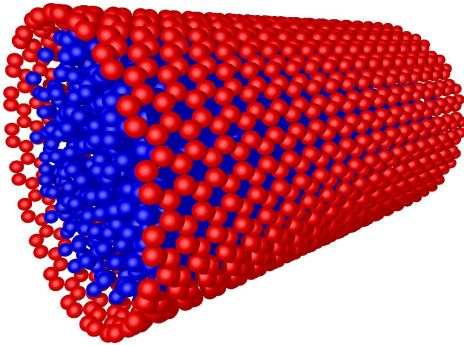


Job Offer: Student Research Assistant

Stellenausschreibung: Wissenschaftliche Hilfskraft

In order to predict or analyse thermodynamic material properties like pressure or potential energy of a material, molecular dynamic simulations are getting more and more important. A typical example is the simulation of a mixture of two different gases with millions of molecules by studying the interaction of the single particles.



At the beginning of a timestep the positions and velocities of the molecules are given. From the positions, forces between the molecules can be determined, and the molecules are moved according to those forces.

Such a simulation programme called Is1/Mardyn has been realized over the last few years in a cooperation of the HLRS (Höchstleistungsrechenzentrum Stuttgart), TU Kaiserslautern and our chair, facing the challenges of large amounts of data and high computational intensity necessitating the efficient use of supercomputers and clusters.

To support further development and maintenance of the code, we are looking for a student research assistant.

The position includes but is not limited to the following tasks:

- software design and refactoring of existing parts
- performance analysis and tuning
- implementation of concepts for efficient usage of hardware.
- documentation and testing of the code

Requirements:

- knowledge in software engineering
- good programming skills, experience in c++-development in linux of advantage
- interest in a challenging topic
- interest or knowledge in :
 - shared-memory programming with OpenMP
 - distributed-memory programming in MPI of advantage
 - GPU-Programming with Nvidia Cuda

Contact:

Please send an informal application stating your previous experiences as well as your knowledge or skills to Wolfgang Eckhardt (eckhardw@in.tum.de) or Martin Buchholz (martin.buchholz@in.tum.de).