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Quantum computing

Wednesday, 1 June 2022 08:30 (2h 30m)

Speakers: Göran Wendin (Chalmers, SE), Jake Muff (CSC, FI)

Quantum computing is coming, time to get ready!

In this workshop, we will have a look at the convergence of high-performance computing and quantum computing. Computational modelling is in the future expected to be accelerated by quantum computers.

We start with a presentation of the recently launched NeIC project, Nordic-Estonian Quantum Computing e-Infrastructure Quest (NordIQuEst), by Prof. Göran Wendin (Chalmers). NordIQuEst is a cross-border collaboration of seven partners from five NeIC member states, that will combine several HPC resources and quantum computers into one unified Nordic quantum computing platform.

This is followed by a practical approach to quantum programming. In order to use quantum computers, novel quantum algorithms are required. These can, and should! be developed already now. After an introduction of the basics, we will program and run a simple quantum algorithm using jupyter notebooks (python) and myQLM.This will be followed by a short hands on session where you will create a Quantum Random Number Generator.

Agenda:

08:30 - 09:15 Göran Wendin: NordiQuEst HPC-QC ecosystem

09:15 - 10:15 Jake Muff: Quantum Hello World

10:15 - 10:30 Break

10:30 - 11:00 Jake Muff: Hands on Quantum Random Number Generator

Prerequisite: own laptop recommended; no previous experience with quantum computing expected

Size of poster

Session Classification: Workshops