UNIVERSITÉ DE FRIBOURG
UNIVERSITÄT FREIBURG

DEPARTEMENT D'INFORMATIQUE
DEPARTEMENT FÜR INFORMATIK

INFORMATICS COLLOQUIUM

Speaker:

Dr. Fabio Porto, National Laboratory of Scientific Computing (LNCC), Brazil

Managing and Analysing Simulation Data

Abstract:

The increasing processing power of HPC systems has enabled the development of realistic simulations of phenomena in different areas, such as Oil and Gaz, engineering, medicine and meteorology. As simulation quality improves, and HPC systems approach exaflop performance, scientists use of simulation output evolve to complex data analytics tasks. Unfortunately, data management systems have completely neglected the domain of numerical simulations leading scientists to express complex analysis using ad-hoc programs on top of proprietary file formats or libraries such as NETCDF and HDF5. In this talk we will present the work we have being developing on data management to support numerical simulations. We will first discuss a technique to answer spatial queries about the uncertainty in simulation results. Next, we will present the SAVIME systems (Simulation and Vizualization in-memory), a multidimensional array DBMS designed with the following principles: to incur in minimum data ingestion overhead; to support complex data structures, such: as meshes, data geometry and simulation metadada; support data visualization and offer users a declarative query interface and optimization.

Bio:

Fabio Porto is a Senior Researcher at the National Laboratory of Scientific Computing (LNCC), in Brazil. He is the founder of the DEXL Laboratory, developing R&D activities in the context of scientific data analysis and management. He holds a PhD in Informatics from PUC-Rio, with sandwich at INRIA, in 2001, and a postdoc at Ecole Polytechnique Fédérale de Lausanne (EPFL). He has more than 80 research papers published in International Conferences and Scientific Journals, including VLDB, SIGMOD, SSDBM and ICDE. He was the General Chair of VLDB 2018 and SBBD 2015. Since 2018 he has been a member of the SBBD steering committee, and a member of SBC and ACM.

Date and time: *Monday November 11, 2019,4.00 pm*
Location: *Pérolles 21, room B205, Bd de Pérolles 90, Fribourg*
Contact person: *Prof. Philippe Cudré-Mauroux*

The colloquium is free and open to the public.