

Mathematics

Instructor

Parallel Computations Mathematics (M4997)

This course will focus on the parallel implementation of computational mathematics problems using modern accelerated C++. The aim of this course is to learn how to quickly write useful efficient C++ programs. The students will not learn low-level C/C++ instead they will learn how to use high-level data structures, iterators, generic strings, and streams (including interactive and file I/O) of the C++ ISO Standard library. In addition, highly-optimized linear algebra libraries are introduced since the course teaches to solve problems, instead of explaining low-level C++ and computer science algorithms, like sorting algorithms, which are provided in the C++ standard library.

- Taught @LSU: Fall 2019 and Fall 2020
- Slides, Exercises, and Course notes.
- Reference: [1]

Teaching assistant

- Einführung in die Numerische Mathematik (Introduction to numerical mathematics), University of Bonn, 2015
- Algorithmische Mathematik (Mathematical algorithms), University of Bonn, 2013/2014
- Wissenschaftliches Rechnen 2 (Scientific Computing 2), University of Bonn, 2013

Computer science

Teaching assistant

- Computational Fluid Mechanics, University of Stuttgart, 2012

References

- [1] Patrick Diehl and Steven R. Brandt. Interactive C++ code development using C++Explorer and GitHub Classroom for educational purposes. In *Proceedings of Gateways 2020*, page 5. Science Gateways Community Institute (SGCI), 2020.