

Seminar „Improving your life through simulation!“ – SoSe 2024

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Preliminary meeting: Monday, 15. April, 13:00 – 14:00 hrs, Seminar room: 0.124
The preliminary meeting at which the lecture topics are distributed is mandatory for all participants - if you are unable to attend, please contact the lecturers in advance (e-mail: gautam.ghosh@ipvs.uni-stuttgart.de, danyal.maheshwari@ipvs.uni-stuttgart.de).

The motivation of this seminar is to give an introduction to numerical simulations. In the last decade there has been an exponential growth in using computers to simulate complex real life phenomena. Computer simulations are needed wherever physical experiments are too expensive or impossible.

Real world events like earthquakes, automotive aerodynamics can be simulated using computers.

In this seminar, there are topics that complement the statistics and stochastics and numerics lectures on the one hand, but on the other hand there are also topics that go in the direction of simulating complicated problems on the computer (which may well be a supercomputer here). The topics are varied and range from abstract high-dimensional spheres to the concrete modeling of pandemics.

Enjoying mathematical thinking is a prerequisite for having fun in this seminar. If you have already attended more lectures from the SC (Pflüger), SGS (Mehl) or US3 (Uekermann) departments (e.g. "Fundamentals of Scientific Computing" or "High Performance Computing"), you can even build on them, but this is not necessary.

Procedure

- You will be given a topic and a supervisor at the preliminary meeting (Date s.o.)
- Based on the literature you receive from your supervisor and your own research, you must write a paper of 6-8 pages.
- Review process (peer reviewing process) of the papers, just like in real life :-)
- Seminar lectures of 30 minutes duration; these will probably be held as a block event in the first lecture-free week (July 24 to 28)
- Language: English

