

Advanced Mathematical Fluid Dynamics

As a complementary program to the lecture on “Advanced Mathematical Fluid Dynamics” by Camilla Nobili this seminar will discuss some contents of the lecture but in addition the students are expected to actively participate by giving talks about topics not touched in the lecture and discussing them in the seminar. Topics will be chosen together with the students according to their background and interests.

Students (or groups of students) will give a short talk of about one hour about a certain topic. Each (group’s) presentation will be discussed in terms of content and presentation. Presentations can be given either as beamer presentations or the classical way with chalk on the blackboard.

Note that some topics are lengthy and it is part of the task to condense the topic to the relevant points.

In addition participants are welcome to suggest topics as well.

Topics, Speakers and Dates

Nov 7th, 4:15pm

- Speakers: Socrates, Nuel and Kamal
- Topic: *Modeling of the incompressible Euler and Navier-Stokes equations*

Nov 21st, 4:15pm

- Speakers: Sofia and Vishnu
- Topic: *Saddle point problems in Hilbert spaces and weak solutions to the Stokes equation*

Dec 5th, 4:15pm

- Speakers: Rachit and Daniel
- Topic: *Theory and numerical simulation of an advection-diffusion equation*

Dec 12th, 4:15pm

- Speakers: Fabian, Nour and Timi

- Topic: *Galerkin methods and existence of weak solutions to the Navier-Stokes Equations*

Dec 19th, 4:15pm

- Speakers: Henrik and Hendrik
- Topic: *Stokes equation and mantle convection*

Jan 9th, 4:15pm

- Speakers: Gesine and Can
- Topic: *Well-posedness of the KdV Equation through Time Averaging*

Jan 16th, 4:15pm

- Speakers: Thisal
- Topic: *Scalar Conservation Laws*

Jan 23rd, 4:15pm

- Speakers: Arman
- Topic: *Rotation and Vorticity*