

Bachelor Thesis

(Bakkalaureatsarbeit)

on the topic

“Navier-Stokes Equations”

- **Title:** Navier-Stokes Equations
- **Supervisor:** o.Univ.-Prof. Dr. Ulrich Langer
- **Student:** Alexander Blumenschein
- **Abstract:** The Bachelor Thesis should give the derivation of the Navier-Stokes Equations as presented in the Lectures and in the Proseminar (proof of the transport theorem). The Chapter “Special Fluids” should also consider fluids that were not or not completely discussed in the classes (ideal fluids, compressible Newtonian fluids, ...).
- **Road Map for the Bachelor Thesis:**
 1. Introduction
 2. Preliminaries (Euler- and Lagrange descriptions, Transport theorem etc.)
 3. Derivation of the Navier-Stokes Equations
 4. Special Fluids
 5. Conclusions
 6. References
- **Literature:** Lectures and Seminars (Proseminar) on Mathematical Models in Engineering
- **Additional Literature:** [1]

References

- [1] M. Feistauer. *Mathematical Methods in Fluid Dynamics*. Longman Scientific & Technical, 1993.