Flow Visualization

Summer

(in German: Flow Visualization)

Module-ID: FIN-INF-120261

Abbreviation	Credit Points	Semester	Term	Duration	Language	Level
FlowVis	6	Summer	starting at 1.	1 Semester	english	Master

Link:	LSF
Limited accessability:	false
Responsibility:	Holger Theisel
Lecturer:	Holger Theisel
Classes:	• Vorlesung *Flow Visualization* • Übung *Flow Visualization*
Applicability in curriculum:	- M.Sc. INF: Informatik - M.Sc. INGINF: Informatik - M.Sc. WIF: Informatik - M.Sc. DKE: Applied Data Science - M.Sc. DE: Fachliche Spezialisierung - M.Sc. VC: Visual Computing

Intended learning outcomes:
The students

- understand the basic concepts of Flow Visualization in the broader context of Visualization
- are able to create their own visualization projects
- learn both the theoretical basics and applications of Flow Visualization
- are able to acquire in-depth knowledge of Flow Visualization after finishing the course

Content:

- Mathematical principles of vector and tensor fields
- Obtaining flow data
- Direct methods for flow visualization
- Texture-based methods for flow visualization
- Geometry-based methods for flow visualization
- Feature-based methods for flow visualization
- Topological methods for flow visualization
- Finite Time Lyapunov exponents
- objective methods for flow visualization

Workload:
56 contact hours + 124h self study

Pre-examination requirements:	Type of examination:	Teaching method / lecture hours per week (SWS):
	oral exam	• 2 SWS lecture • 2 SWS exercise class

Prerequisites according to examination regulations:	Recommended prerequisites:
keine	Einführung in die Computergraphik oder Computer Graphics - an Introduction

Media:	Literature:

Comments:

Revision #1
Created 2026-10-20 16:59:20 UTC by Fakultät für Informatik
Updated 2026-10-20 16:59:20 UTC by Fakultät für Informatik