

		Monday		Tuesday		Wednesday		Thursday		Friday	
		Lecture	Content	Lecture	Content	Lecture	Content	Lecture	Content	Lecture	Content
09:00	09:15	Registration		HPCFD03: Numerics of PDEs, Finite Differences	Classification and Properties of relevant PDEs	HPCFD05: Finite Element Method and Incompressible Flows	Presentation of the fundamentals of Finite Elements for Fluid Mechanics, Properties and Methods for Incompressible flows	HPCFD07: Turbulence	- Property and models; DNS, LES, RANS (k-eps) - lambda criterion	HPCFD08: Parallelization	MPI/OpenMP Hardware
09:15	09:30	HPCFD01: Introduction	Basic equations, Flow regimes								
09:30	09:45										
09:45	10:00	HPCFD02: Compressible Flows	Mach, Re, regime								
10:00	10:15			HPCFD04: Finite Volumes	Basic Idea, Riemann Problem, Flux Functions, Properties	HPCFD06: Higher Order	Reconstruction for Finite Volumes, Discontinuous Galerkin	HPCFD09: Parallelization	Access to systems		
10:15	10:30										
10:30	10:45	Exercise X1: Introduction on HPC system	Modules, Batchsystem					HPCFD10: Parallelization	I/O		
10:45	11:00										
11:00	11:15										
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13:15	13:30	Mittagspause									
13:30	13:45										
13:45	14:00										
14:00	14:15	HPCFDX2: Introduction on Visualization	Making use of Paraview	Exercise X3: Flux function and Riemann problem simulation	Running shock simulations with different Flux Functions	Lattice-Boltzmann Method (HPCFD11)	- cut-cells (FV) - LB-q-Val - penalty-term (DG/FEM)	HPCFDX7: DG in Ateles	Simulations on the effect of scheme order	Exercise X9: Performance Assessment for Ateles	Characterization of mesh-based solvers like Ateles
14:15	14:30										
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15:00	15:15										
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15:30	15:45	Exercise X2: Using Ateles	Using Ateles to run Simulations on the Cluster	Exercise X4 Gasdynamics	Post-Processing results from the simulations of Monday; Setup of Jet simulation	Exercise: Musubi and Mesh generation	Generating Meshes and running simulation with Musubi	Exercise X8: Post-processing the results of the Jet simulation	Looking into the simulations, with respect to the effect of the different discretizations		
15:45	16:00										
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