

Monday, December 2nd			
8:30	09:00	Registration	
9:00	09:30	Introduction to the school on numerical methods for parallel CFD: aims and objectives I. Spisso / S.Pirozzoli / G. Amati	INTRO
9:30	10:15	HPC CINECA Infrastructure: State of the art and towards the exascale CINECA staff SuperComputing Applications and Innovation (SCAI) Department, CINECA	HPC 1
10:15	11:15	Principle/re-cap of parallel computing paradigms on standard and heterogeneous architectures: MPI, OpenMP, GPGPU/ARM.... CINECA staff	HPC 2
11:15	11:30	Coffee break	break
11:30	13:15	Numerical methods for unstructured finite-volume general-purpose solvers: the OpenFOAM framework TBD / ESI-OpenCFD	CFD 1
13:15	14:00	Lunch	break
14:00	15:45	HPC Performance Improvements for OpenFOAM linear solvers I. Spisso / S. Bna SuperComputing Applications and Innovation (SCAI) Department, CINECA	TUT 1
15:45	16:15	CHEESE use-case: pyroclastic flows with OpenFOAM INGV / CINECA	CFD 2
16:15	16:15	Coffee break	break
16:15	17:30	How to benchmark and profile OpenFOAM in HPC environment CINECA Staff SuperComputing Applications and Innovation (SCAI) Department, CINECA	TUT 1
18:00	19:00	Welcome cocktail @ Chostro di San Pietro in Vincoli	
Tuesday, December 3th			
9:00	10:00	CFD EU on-going Projects: Driving Application to exa-performances (Excellerat, Cheese, HiFi Turb) CINECA staff SuperComputing Applications and Innovation (SCAI) Department, CINECA	HPC 3
10:00	11:15	Finite-Difference Incompressible flow solvers P. Orlandi Department of Mechanical and Aerospace Engineering University of Rome "La Sapienza"	CFD 3
11:15	11:30	Coffee break	break
11:30	13:30	Discontinuous Galerkin Methods F. Bassi Department of Engineering and Applied Science, University of Bergamo	CFD 4
13:30	14:30	Lunch	break
14:30	16:00	Hands-on / tutorial: DG method A. Colombo Department of Engineering and Applied Science, University of Bergamo	TUT 2
16:00	16:15	Coffee break	break
16:15	17:30	Hi-Fi Turb use-case: PRACE Project: test case TC02- MTU161 Hand-on / tutorial: DG method A. Colombo Department of Engineering and Applied Science, University of Bergamo	TUT 2
Wednesday, December 4th			
9:00	11:15	Numerical Methods for compressible/high-speed flow S. Pirozzoli Department of Mechanical and Aerospace Engineering University of Rome "La Sapienza"	CFD 5
11:15	11:30	Coffee break	break
11:30	13:30	Physics and high-performance computation of turbulent flows with interfaces A. Soldati Institute of Fluid Mechanics and Heat Transfer, Vienna	CFD 6
13:30	14:30	Lunch	break
14:30	15:45	Hands-on: multi-phase flow F. Zonta Institute of Fluid Mechanics and Heat Transfer, Vienna	TUT 3
15:45	16:00	Hands-on: multi-phase flow F. Zonta Institute of Fluid Mechanics and Heat Transfer, Vienna	TUT 3
16:00	16:15	Coffee break	break
16:15	17:30	TDB Social Dinner?	
Thursday, December 5th			
9:00	11:15	Preconditioning and Krylov subspace methods for fluid flow problems M. Benzi Scuola Normale Superiore, Pisa	CFD 8
11:15	11:30	Coffee break	break
11:30	13:30	Preconditioning techniques for large linear systems C. Janna Civil, environmental and architectural Engineering, Università degli studi di Padova	CFD 9
13:30	14:30	Lunch	break
14:30	16:00	Numerical modeling with Immersed boundary techniques R. Verzicco Dipartimento di Ingegneria Industriale, University of Rome "Tor Vergata" / Physics of Fluids Group, MESA+ Institute, and J. M. Burgers Centre for Fluid Dynamics, University of Twente	CFD 10
16:00	16:15	Coffee break	break
16:15	17:30	Hands-on / tutorial: numerical simulation of incompressible flows with AFID F. Viola Dipartimento di Ingegneria Industriale, University of Rome "Tor Vergata"	TUT 4
Friday, December 6th			
9:00	11:15	Spectral methods and spectral element methods C. M. Casciola, F. Battista Department of Mechanical and Aerospace Engineering University of Rome "La Sapienza"	CFD 11
11:15	11:30	Coffee break	break
11:30	13:30	Incompressible flow modeling with the spectral element solver Nek5000 A. Peplinski KTH	CFD 12
13:30	14:30	Lunch	break
14:30	15:45	Hands-on: Nek5000 A. Peplinski KTH	TUT 5
15:45	16:00	Excellerat use-case: CINECA staff / KTH High fidelity simulation of rotating parts with Nek5000	CFD 13
15:45	16:15	Coffee break	break
16:15	17:30	Hands-on: Nek5000 A. Peplinski KTH	TUT 5