

Debugging and Optimization of Scientific Applications

16th-19th March 2026

Teachers: Emerson, Molinari, Bellentani, Latini, Gorni, Monterubbiano

Agenda

16 March - Monday		
9.00 - 9.15	Presentations	
9.15 - 10.45	HPC hardware	Emerson
11.15 - 12.30	Compilers and optimizations	Emerson
LUNCH		
14.00 - 15.00	Compilers and optimization	Emerson
15.00 - 16.00	CINECA HPC enviroment	Molinari
16.00 - 17.30	Rooflines with Intel Advisor	Bellentani

17 March - Tuesday		
9.00 – 11.00	Profiling Python	Gorni
11.30 – 12.30	Introduction to GPU hardware	Orlandini
LUNCH		
14.00 - 15.30	Debugging GPU codes	Orlandini
16.00 - 18.00	GPU kernel profiling with NVIDIA Nsight Compute	Orlandini

18 March - Wednesday		
9.00 – 11.30	Debugging techniques	Latini
11.45-12.30	Debugging with Totalview	Latini
LUNCH		
14.00 - 15.30	Debugging with Totalview	Latini
16.00 - 18.00	MPI profiling with Score-P/Scalasca	Bellentani

19 March - Thursday		
9.00 - 10.30	Optimizing heterogenous codes	Bellentani
11.00 - 12.30	Async and multi-GPU optimizations	Bellentani
LUNCH		
14.00 - 16.00	Energy monitoring	Monterubbiano