ONLINE SUMMER SCHOOL ON PARALLEL COMPUTING

Online Event

June 29th – july 3rd 2020

AGENDA

June 29th

9:30-10 Welcome and Introduction (A.Emerson)

10:00 - 10:15 Introduction to M100: the most recent member of the Marconi family. How to request a budget, the on line documentation, the support, the access mode and available storage spaces (E. Rossi)

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10:15 - 11:00 The main hardware characteristics (F.Cola)

11:00 - 11:30 Break

11:30 - 12:30 Programming environment: the main compilers and libraries available under base and advanced profiles to install your own code and the main compiler options specific for an accelerated system (D.Molinari)

14:15 - 15:00 Production environment: the main applications available on M100 under domain profiles and the execution phase with the request of cpu/gpu resourses, loading of modules, scheduling of jobs, consumption of budget (A. Marani)

15:00 - 15:30 Break

15:30-15:45 Inter and intra node performances (A.Marani)

15:45 - 16:30 Molecular Dynamics on the M100 (A.Emerson)

June 30th

9.30-10.30 Introduction to MPI Point-to-Point (A. Marani)
10.30-11.00 Break
11.00-12.00 MPI Point-to-Point exercises (A. Marani, A. Emerson)
12.00-14.00 LUNCH
14.00-15.00 MPI Collectives and advanced MPI (A. Emerson)
15.00-15.30 BREAK
15.30-16.30 Parallelisation of the Jacobi Solver (A. Emerson, A. Marani)

July 1st

OpenMP(Teachers: F.Affinito + A.Emerson)

9.30 - 10.30 Introduction to OpenMP
10.30-11.00 Break
11.00 - 12.00 Exercises
12.00 -14.00 Lunch
14.00 -15.00 Further OpenMP and tasking

July 2nd

9:30 - 10:00 Intro to GPGPU Computing + Intro OpenACC
10:00 - 11:00 Intro to OpenACC (part1)
11:30 - 13:00 OpenACC (part2) + handson
14:00 - 15:30 Intro to CUDA (part1)
16:00 - 17:30 Intro to CUDA (part2) + handson

July 3rd

9:30 - 11:00 CUDA Memory Model (part1)
11:30 - 13:00 CUDA Memory Model (part2) + handson
14:00 - 15:30 CUDA Concurrency (part1)
16:00 - 17:30 Cuda Multi GPU (part2) + hand