Mon 19/09

08:00

Welcome and Introduction — *Dr Isabel Campos Plasencia*
Benasque Center for Physics 08:45 - 09:00

09:00

Lattice QCD at Exascale: challenges and way ahead - I — *Dr Mattia Bruno*
Benasque Center for Physics 09:00 - 10:00

10:00

LHC (and in general in Experimental HEP) computing challenges — *Dr Tommaso Boccali*
Benasque Center for Physics 10:00 - 11:00

11:00

Coffee Break
Benasque Center for Physics 11:00 - 11:30

Facilitating access to HPC via Containers — *Jorge Gomes*
Benasque Center for Physics 11:30 - 12:15

12:00

The Challenge of Data Management — *Dr Patrick Fuhrmann*
Benasque Center for Physics 12:15 - 13:00

13:00

Lunch Break
Benasque Center for Physics 13:00 - 14:30

14:00

Machine Learning in LQCD — *Dr Luigi Del Debbio*

15:00

Data Analysis Techniques *Dr Alberto Ramos*

16:00

17:00

18:00

Benasque Center for Physics 15:30 - 18:30

Tue 20/09

09:00 **Lattice QCD at Exascale: challenges and way ahead - II** *Dr Mattia Bruno*

Benasque Center for Physics 09:00 - 10:00

10:00 **Introduction to Multilevel Algorithms - I** *Dr Martin Lüscher*

Benasque Center for Physics 10:00 - 11:00

11:00 **Coffe Break**

Benasque Center for Physics 11:00 - 11:30

Spin Glasses *Dr Juan Jesus Ruiz Lorenzo*

12:00

Benasque Center for Physics 11:30 - 13:00

13:00 **Lunch Break**

Benasque Center for Physics 13:00 - 14:30

14:00 **Quantum computing - a primer + applications in Experimental HEP** *Dr Tommaso Boccali*

Benasque Center for Physics 14:30 - 15:30

15:00 **Data Management and Advanced computing tutorials**

16:00

17:00

Benasque Center for Physics 15:30 - 18:00

18:00

Wed 21/09

09:00 **Future challenges on Nucleon matrix elements** *Dr Rajan Gupta*

Benasque Center for Physics 09:00 - 10:00

10:00 **Multilevel algorithms - II** *Dr Martin Lüscher*

Benasque Center for Physics 10:00 - 11:00

11:00

Coffee Break

Benasque Center for Physics 11:00 - 11:30

Including QED in QCD: challenges and way ahead - I *Dr Agostino Patella*

Benasque Center for Physics 11:30 - 12:30

12:00

Machine Learning in LQCD - II *Dr Luigi Del Debbio*

Benasque Center for Physics 12:30 - 13:30

13:00

Lunch Break

Benasque Center for Physics 13:30 - 15:00

14:00

15:00

Overview on GPUs + Hands-on examples *Dr Antonio Rago*

Benasque Center for Physics 15:00 - 18:00

16:00

17:00

18:00

19:00

20:00 **Official School dinner at "La Llardana" (see http://lallardanabenasque.com)**

20:00 - 23:00

21:00

22:00

23:00

Thu 22/09

09:00 **Including QED in QCD: challenges and way ahead - II** *Dr Agostino Patella*

Benasque Center for Physics 09:00 - 10:00

10:00 **Multilevel Algorithms - III** *Prof. Martin Lüscher*

Benasque Center for Physics 10:00 - 11:00

11:00 **Coffee Break**

Benasque Center for Physics 11:00 - 11:30

AMD accelerators: an overview *Samuel Antao*

12:00

Benasque Center for Physics 11:30 - 12:30

FPGAs: hardware overview *Dr Antonio Gordillo*

13:00

Benasque Center for Physics 12:30 - 13:30

Lunch Break

14:00

Benasque Center for Physics 13:30 - 15:00

15:00 **FPGAs tutorial** *Dr Antonio Gordillo*

16:00

Benasque Center for Physics 15:00 - 17:00

17:00

Fri 23/09

09:00 **Machine Learning practical tutorial - I** *Dr Simone Bacchio*

Benasque Center for Physics 09:00 - 10:00

10:00 **Machine Learning tutorial - II** *Dr Simone Bacchio*

Benasque Center for Physics 10:00 - 11:00

11:00 **Machine Learning tutorial - III** *Dr Simone Bacchio*

Benasque Center for Physics 11:00 - 12:00

12:00

Coffee break

Benasque Center for Physics 12:00 - 12:30

The EuroHPC ecosystem *Isabel Campos Plasencia*

13:00

Benasque Center for Physics 12:30 - 13:30

Lunch

14:00

Benasque Center for Physics 13:30 - 15:00

15:00

Performance Portability SyCL + Tutorial Intel *Igor Vorobstov*

16:00

17:00

Benasque Center for Physics 15:00 - 18:00

18:00