

Lattice Practices 2014

The 5th training workshop "Lattice Practices" was held at DESY Zeuthen March 5th to 7th this year. The scope of the Lattice Practices workshops is to provide training in state-of-the-art numerical techniques and the use of information technologies for research in lattice QCD (LQCD). Geared towards young researches, PhD students, and other interested LQCD practitioners, the workshops feature lectures on technical topics accompanied by hands on exercises with strong emphasis on practical training. Furthermore, a few very recent scientific developments are covered in order to expose the young researchers and students to potential areas of future research.

This year's workshop was organized by the Joint SimLab "Nuclear and Particle Physics" of Cyprus Institute, DESY, and JSC. Speakers from the SimLab partners and other European institutions gave technical lectures and hands-on tutorials on topics commonly dealt with in their field of research. The

topics ranged from data analysis and numerical techniques over optimization strategies and computer architecture to Higgs physics on the lattice. In the accompanying hands on sessions the participants were introduced to octave, given examples on basic techniques such as binning and error and autocorrelation analysis, but also given typical physics tasks, such as scale setting using realistic data sets. A particular emphasis was put on optimal programming, when the course of lectures and exercises went down to the silicon, to introduce the attendees to code optimization techniques and HPC architectures in general. This was completed by an introduction to numerical linear solver techniques and deepened in the accompanying exercises for both topics. The two recent developments covered in the course of lectures were: "Lattice aspects of Higgs physics" and disconnected diagrams.

A total of 29 young researches and students participated in this year's workshop, coming from institutions all over Europe, from Italy to Finland, but also from as far as the United States of America and Singapore. The opinions expressed through evaluation forms showed that the workshop was a great success and provided encouraging feedback for the next workshop, which is planned to take place during autumn of 2015. The slides of the talks and material of the hands on sessions can be found at:

<https://indico.desy.de/event/LAP2014>

contact: Stefan Krieg,
s.krieg@fz-juelich.de

- Stefan Krieg¹
- Dirk Pleiter¹
- Rainer Sommer²
- Karl Jansen²
- Hubert Simma²
- Stefan Schäfer²
- Constantia Alexandrou³
- Giannis Koutsou³

¹ Jülich Supercomputing Centre (JSC), Germany

² John von Neumann Institute for Computing (NIC), DESY Zeuthen, Germany

³ Computation-based Science and Technology Research Center (CaSToRC), Cyprus



Figure 1: Participants of Lattice Practices 2014.