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Softwarepark News

Computer Algebra and Quantum Field Theory in Hagenberg

Donnerstag, 9. August 2012

The interdisciplinary school "Integration, Summation and Special Functions in Quantum Field Theory" (July 9- 13, 2012) was jointly organized by the Deutsches Elektronen-Synchrotron (Johannes Blümlein, DESY) and the Research Institute for Symbolic Computation (Carsten Schneider, RISC). It was carried out in the framework of LHCPhenoNet, an initial training network of the European Commission.



At the conference place of RISC in Hagenberg about 40 international PhD students and scientists met to learn new technologies in the fields of (symbolic) summation, (symbolic) integration and special functions that are relevant in the calculations of challenging problems arising in the context of Quantum Field Theory (QFT).

16 leading experts in their respective fields presented in introductory lectures the advanced techniques from different points of view (mathematics, computer science, physics). In inspiring discussions throughout the interdisciplinary school, the speakers and participants elaborated possibilities how the presented techniques and algorithms can be applied for new problems within QFT.

The focus was led on technologies, which are to the core of perturbative Feynman-diagram calculations. For instance, on July 4 the CERN experiments ATLAS and CMS have presented first signals of a new elementary particle which could be a candidate for the Higgs particle. This new phenomenon will be explored in details at CERN within the next years in order to determine precisely the new properties of this particle. It is expected that the tools presented at this school are contributing for these ongoing and future calculations.

Kontakt

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