

Theory challenges for LHC physics



Summer School "Theory Challenges for LHC Physics"

Workshop "Calculations for Modern and Future Colliders"

Monday, July 20, 2015 - Thursday, July 30, 2015

Joint Institute for Nuclear Research, Bogoliubov Laboratory of Theoretical Physics

Scientific Program

The School topics:

Introduction to the hadron collider physics

Higgs physics

QCD for colliders

Beyond the Standard Model

Computational techniques for the LHC

Modern computational methods for scattering amplitudes

Flavor physics

Future collider

The CALC-2015 Workshop topics:

Precision theoretical calculations for experiments at the LHC

Methods of multiloop calculations and resummation

Computer codes for calculations in HEP

Theoretical predictions beyond the Standard Model

Modern computational methods for scattering amplitudes

The lectures will be given by:

Michelangelo Mangano (CERN)

Introduction to hadron collider physics

Michael Spannowsky (Durham Uni.)

Higgs physics

Stefan Gieseke (KIT)

QCD for colliders

Rutger Boels (DESY)

Modern computational methods for scattering amplitudes

Thorsten Ohl (Wuerzburg Uni.)

Computational techniques for the LHC

Simon Badger (CERN)

QCD amplitudes at NLO and beyond

Alexander Belyaev (Southampton Uni.)

Beyond the Standard Model

Thomas Mannel (Siegen Uni.)

Flavour Physics

Thomas Hahn (MPI Munich)

Symbolic Programming in HEP

Joachim Mnich (DESY)

Future colliders

Grigory Trubnikov (JINR)

NICA project at JINR

Alexander Eremin (JINR)

Heavy Elements and Island of Stability