

T 1: Hauptvorträge 1

Zeit: Montag 9:00–10:30

Raum: K.11.24 (HS 33)

Hauptvortrag T 1.1 Mo 9:00 K.11.24 (HS 33)
Status of the Standard Model at the LHC — •ULLA BLUMEN-
SCHEIN — II Physikalisches Institut, Uni Göttingen

The successful operation of the LHC at collision energies of 7 and 8 TeV allows for precision tests of the Standard Model of particle physics at new energy regimes. Measurements of total and differential cross sections of jets and gauge bosons probe the validity of the Standard Model at the TeV scale, where the impact of higher-order quantum chromodynamics and electroweak effects becomes sizable. Fundamental parameters of the Standard Model can be extracted. Probing the gauge boson self interaction improves our understanding of electroweak symmetry breaking and unitarity. The description of the proton structure can be extended to new kinematic regimes.

The improved understanding of fundamental processes allows even-

tually to improve the modelling of irreducible backgrounds to Higgs physics and searches and to constrain new physics.

Highlights of the results obtained by the LHC experiments are reviewed and future prospects are presented.

Hauptvortrag T 1.2 Mo 9:45 K.11.24 (HS 33)
LHC-phenomenology: Status, Prospects for the TeV-scale —
•MICHELANGELO MANGANO — CERN, PH-TH, Geneva, Switzerland

The contribution will first review the key lessons emerged from the first 3 years of experiments at the Large Hadron Collider, in the light of the outstanding open issues of particle physics. The presentation will then address the challenges and the opportunities offered by the data to be collected in the next years