

## T 74: Eingeladene Vorträge (Invited Topical Talks) V

Time: Thursday 14:00–15:30

Location: Tc

**Invited Topical Talk** T 74.1 Thu 14:00 Tc  
**Searches for electroweak supersymmetry: highlights, coverage and limitations** — ●JEANETTE MIRIAM LORENZ — LMU Muenchen, Germany

Supersymmetry is an appealing extension beyond the Standard Model, which could provide e.g. a particle candidate for Dark Matter. Both the ATLAS and the CMS experiments at the Large Hadron Collider, CERN, carry out a comprehensive search program, addressing several complementary signatures of supersymmetric particles. Searches for the supersymmetric partners of the electroweak gauge bosons (charginos and neutralinos) and leptons (sleptons) are particularly challenging due to low cross sections and possibly low-energetic decay products. The increasing data statistics as well as improvements in the technical methods allow some of these searches to be done for the first time at the LHC. Recent highlights of these searches will be presented along with the assumptions made in the interpretation of the results. Although these searches have not resulted in a discovery yet, there are several ways how supersymmetry could hide, which guide us to new directions in future searches.

**Invited Topical Talk** T 74.2 Thu 14:30 Tc  
**To the top and beyond: top quarks as a probe of new interactions at the LHC** — ●KATHARINA BEHR — DESY

As the heaviest known elementary particle with a close to unity Yukawa coupling to the Higgs field, the top quark plays a special role in the Standard Model and in searches for new particles and interactions, which are often predicted to couple preferentially to the third quark generation. Searches targeting the complex detector signatures of single or multiple top quarks aim, for example, to shed light on dark matter or probe the existence of additional Higgs bosons. I will review the strategies of searches involving top quarks or hypothetical top partners on LHC data from proton-proton collisions at  $\sqrt{s} = 13$  TeV, highlighting new analysis and reconstruction techniques.

**Invited Topical Talk** T 74.3 Thu 15:00 Tc  
**Stress testing the Standard Model via vector-boson scattering at the LHC** — ●MATHIEU PELLEN — Physikalisches Institut, Freiburg, Germany

Vector-boson scattering (VBS) processes have just started to be measured at the Large Hadron Collider (LHC). This is particularly exciting because this class of processes has been thought to be a possible window to new physics. But VBS is also interesting in its own right because it probes the Standard Model in extreme phase-space regions at high energy. The measurement of such processes is particularly challenging due to their low rates and large background. In this talk, I review necessary theoretical inputs to perform such measurements.