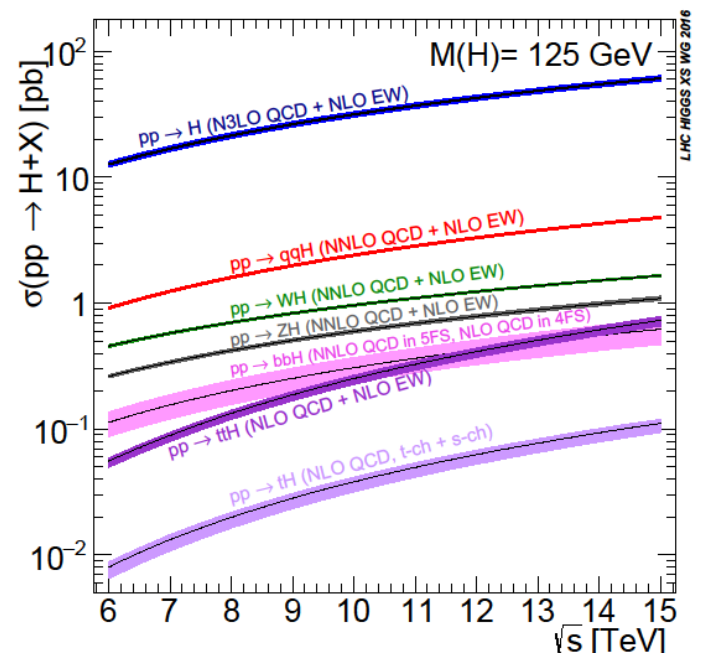


# Towards Electroweak Precision at the LHC.

**Tuesday, 19 December 2017**  
**DESY Auditorium**  
**16:45 h**

**Stefan Dittmaier**  
**(Univ. Freiburg)**



After the discovery of a Higgs boson at the CERN LHC in summer 2012, the LHC experiments have successfully carried out numerous precision measurements with jets, electroweak gauge bosons, the Higgs boson, and heavy flavours. The corresponding results are in very good agreement with the predictions of the Standard Model of particle physics. Nevertheless, crucial questions remain: Is the discovered Higgs boson fully compatible with the minimal Standard Model version, or is it part of an extended scalar sector? Are there new symmetries and new particles at the TeV scale? What is the nature of Dark Matter? Etc. The physics programme of the LHC, running near its design energy with continuously increasing luminosity, addresses these questions. In the absence of spectacular signals of new physics or disagreement with Standard Model predictions, precision seems to be the only way to further scrutinize the Standard Model or to make new discoveries. On the theory side, the field of precision calculations for particle collisions has experienced tremendous progress in recent years. The talk summarizes general elements of precision calculations for LHC processes, focusing on aspects of electroweak interactions in more detail.

- **Coffee, tea and cookies will be served at 16:30h**
- **After the colloquium there is a chance for private discussions with the speaker over wine and pretzels**

