



Contribution ID: 1367

Type: Oral Presentation

## **Production of heavy Higgs bosons and decay into top quarks at the LHC ( $15' + 5'$ )**

*Friday 5 August 2016 17:00 (20 minutes)*

As heaviest elementary particle, the top quark represents an ideal laboratory to search for physics beyond the SM. In this talk we study an extended Higgs sector as a viable SM extension. In particular, we investigate the impact of the type-II two-Higgs-doublet model with two neutral Higgs bosons with masses larger than twice the top quark mass on top-quark pair production. More specifically, we calculate for top-quark pair production the resonant contributions and the contributions from the interference with the SM background (QCD and electro-weak) at next-to-leading order in the strong coupling constant. Using representative CP-conserving as well as CP-violating parameter scenarios phenomenological results will be given for different observables including spin dependent ones. Furthermore a comparison with experimental results is presented.

**Author:** GALLER, Peter (Humboldt-Universität zu Berlin)**Presenter:** GALLER, Peter (Humboldt-Universität zu Berlin)**Session Classification:** Higgs Physics**Track Classification:** Higgs Physics