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Abstract for an Invited Paper for the APR20 Meeting of the American Physical Society

## Top Physics at the LHC ANDREAS JUNG, Purdue University

The talk will highlight latest results on top quark physics at the LHC employing pp collision data. With millions of top quarks already collected at the LHC top quark physics enters the precision era and differential cross section measurements and top quark property measurements are challenging the Standard Model predictions. The presentation focuses on the latest measurements at ATLAS and CMS employing data collected at a center-of-mass energy of 13 TeV. An overview of the latest status on measurements of top quark mass, angular correlations, single top quark production, associated production of top quarks, and rare decays of top quarks. In particular, the intimate connection of the top quark to the Higgs Boson is scrutinized by highly precise direct measurements of the top quark mass, with alternative approaches entering the precision realm as well. Deviations in the top quark sector between theory and experimental measurements might indicate first hints for new physics. The talk concludes with implications for the SM and an outlook towards the ultimate precision frontier at the high-luminosity phase of the LHC.