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## Combined Higgs boson measurements and their interpretations with the ATLAS experiment

Precision measurements of Higgs boson couplings and kinematic properties can be performed using the data collected by the ATLAS experiment, leveraging a variety of final states and production modes to probe different regions of phase space with increasing accuracy. By combining these measurements, the strengths of individual channels are maximally exploited, providing the most stringent global constraints on Higgs boson properties. This talk presents the latest combination of Higgs boson measurements by the ATLAS experiment, with results reported in terms of production modes, branching fractions, Simplified Template Cross Sections, and coupling modifiers. These combined measurements are interpreted in multiple frameworks, including targeted tests of specific beyond-the-Standard-Model scenarios and a broader interpretation using the Standard Model Effective Field Theory (SMEFT). The results are based on proton-proton collision data collected at  $\sqrt{s}=13$  TeV during Run 2 of the LHC.

### Secondary track

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