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Combined measurements of Higgs boson production and decays with the ATLAS detector

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The most precise measurements of Higgs boson cross sections, using the framework of simplified template cross sections, are obtained from a combination of measurements performed in the different Higgs boson decay channels. This talk presents the combined measurements, as well as their interpretations in terms of Higgs coupling modifiers and their ratios, also taking into account results of searches for H- \rightarrow invisible decays as well as off-shell Higgs boson production. It also presents interpretations in generic 2HDM models and in the hMSSM. Finally, the combined measurements are used to constrain the Higgs boson self-coupling, exploiting higher-order electroweak corrections to single Higgs boson production. The individual measurements use pp collision data with a center-of-mass energy of 13 TeV.

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