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## Search for the Higgs boson pair production at $\sqrt{s}=13$ TeV with the ATLAS detector

*Friday, April 21, 2017 5:00 PM (1 hour)*

A summary on Higgs boson pair production searches is presented using pp collision data collected at  $\sqrt{s}=13$  TeV by the ATLAS detector at the Large Hadron Collider in 2015 and 2016 data-taking. The different final states  $4b$ ,  $b\bar{b}\gamma$ ,  $b\bar{b}\tau\tau$ ,  $WWbb$  e  $WW\gamma\gamma$  have been investigated. Results are interpreted as non resonant SM-like  $hh$  production and a narrow heavy Higgs boson decaying to  $hh$  pairs. No evidence of events beyond the background expectation is found. Limits on  $\sigma\times BR$  as a function of the  $hh$  invariant mass are obtained in different mass range. Prospects for the HL-LHC will be also presented.

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