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## Measurement of the Higgs Self-Coupling in the $HH \rightarrow VVbb$ Channel at the FCC-hh Collider

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An important test of the Standard Model (SM) electroweak symmetry breaking sector is the measurement of the Higgs self-interactions. Sensitivity to the Higgs self-coupling for  $m_H = 125$  GeV is evaluated through the measurement of the non-resonant di-Higgs production final states. The considered decay channels are  $HH \rightarrow VVbb$ , where  $V=W,Z$ . For the non-resonant SM signal in an ideal detector parametrization, a precision of  $O(20\%)$  on the SM cross-section can be estimated, roughly corresponding to a precision of  $O(30\%)$  on the Higgs trilinear coupling.

Resonant states decaying into two Higgs bosons give identical signatures as the above mentioned final states, and are predicted in beyond the SM (BSM) theories, like radions (spin 0) or excitations of the graviton (spin 2) in the Randall-Sundrum model. The analysis will be extended to search for such BSM states.

The parton-level generation of the signal and the backgrounds is performed by using MadGraph5\_aMC@NLO and the Delphes fast parametrisation of the FCC-hh detector is used.

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