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Higgs self-coupling projections for future e+e- colliders

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Establishing the shape of the Higgs potential is invaluable in paving a path forward for understanding the principles behind the Higgs mechanism. As the Higgs self-couplings are directly related to the Higgs potential, their measurements are crucial to either verify the SM mechanism for electroweak symmetry breaking sector or uncover new physics.
The physics programmes at future e^+e^- colliders provide access to the trilinear Higgs self-coupling, λ_{HHH}. At Higgs factories, it can only be indirectly accessed via model-dependent fits. More direct information on the λ_{HHH} can be obtained from double-Higgs production available at sufficiently high center-of-mass energies. For such a measurement, precision is key, however, small production cross sections pose challenges and set high standards on the analysis techniques. Recent improvements in analysis techniques have been achieved and are expected to improve the Higgs self-coupling projections.
In this contribution, we review current state-of-the-art projections for the Higgs self-coupling measurement at future e^+e^- colliders and discuss key aspects of improvement, focusing on flavour-tagging, b-jet reconstruction, and kinematic fitting.

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