

Probing the Structure of Higgs-Yukawa Couplings with Charm Quarks

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The search for the Higgs boson using the so-called golden channels was central to the conception and design of the LHC detectors. However, measurements of the Higgs coupling to the third-generation quarks were regarded as extremely challenging and, to the second generation, impossible. This talk will review the innovative techniques that have made probing the Higgs-charm coupling feasible, with a special focus on the pivotal role of machine learning. I will also review the current status of measurements and potential future directions.