

## Heavy resonance searches at the FCC-hh

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The feasibility of a future proton-proton collider (FCC-hh), with center of mass energies up to 100 TeV and unprecedented luminosity is currently being studied.

By delivering an integrated luminosity of few tens of  $\text{ab}^{-1}$ , such a machine will provide an outstanding discovery potential for new physics, far beyond the reach the high luminosity or high energy LHC. In this talk we will discuss searches of heavy resonances decaying into leptons, tops, bosons and light quarks. Depending on the final state and the assumed model, the discovery reach and exclusion potential for heavy resonances ranges from 20 to 45TeV. We will also discuss why studying heavy resonances provides an important handle to constrain the detector design and performance, such as the muon resolution at high transverse momentum, or the calorimeter containment and granularity.

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