

Perspectives for Higgs measurements at Future Circular Collider

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After the discovery of Higgs boson in 2012 at Large Hadron Collider at CERN, Precision measurements in the Higgs sector became important in particle physics. Electron-positron collider (FCC-ee) up to an energy of 365 GeV will reach the ultimate precision of Higgs boson couplings, mass, total width, and CP parameters, as well as searches for exotic and invisible decays.

The measurement of the total ZH cross section is the most priority since it is the input to the determination of the HZZ coupling that can be used by all other measurements at the per-mil level. To measure the electron Yukawa coupling via direct $e^+e^- \rightarrow H$ production at $\sqrt{s} = m_H$, the determination of the Higgs boson mass with a precision significantly better than the Higgs boson width (4.1 MeV in the Standard Model) is a prerequisite.

This talk discusses the FCC integrated program, Higgs “recoil” mass technique, electron Yukawa, and Higgs trilinear measurements.