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Probing electroweak and top quark physics at the FCC-he

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Despite its immense success, the standard model fails to answer issues such as the stability of the electroweak vacuum or matter dominance over antimatter in the Universe. The Higgs boson and top quark sector hold the key to the answer. We need precise values of their couplings for the correct theoretical description of the said issues. Through a framework of the effective theory, we address the potential of the proposed Future Circular Colliders (FCC) for the Higgs boson self-coupling measurements. We further discuss the probe for the top quark flavour-changing neutral current (FCNC) at the Large Hadron-Electron Collider (LHeC).

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