

Measuring CP nature of tau–lepton Yukawa coupling at the e^-p collider

We study the prospect of determining the CP violating phase in τ –lepton Yukawa coupling at the e^-p Collider (LHeC). The beam energy that we have considered for the electron and proton is 150 GeV and 7 TeV respectively. The Higgs is produced through charged current as well as neutral neutral current process with a focus on the earlier because of the higher cross section. We have analyzed interesting CP odd observables utilizing the dominant tau lepton decay channel. The CP violating phase is estimated using chi square corresponding to the T-odd observables and found very promising results.

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