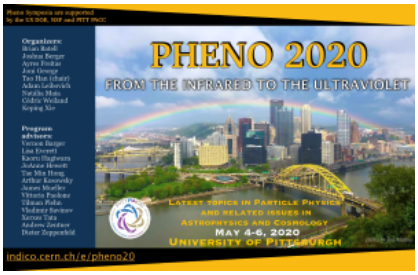

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Probing $Zt\bar{t}$ couplings using Z boson polarization in ZZ production at hadron colliders

Tuesday 5 May 2020 14:30 (15 minutes)

We propose to utilize the polarization information of the Z bosons in ZZ production, via the gluon-gluon fusion process $gg \to ZZ$, to probe the $Zt\bar{t}$ gauge coupling. The contribution of longitudinally polarized Z bosons is sensitive to the axial-vector component (a_t) of the $Zt\bar{t}$ coupling. We demonstrate that the angular distribution of the charged lepton from Z boson decays serves well for measuring the polarization of Z bosons and the determination of a_t. We show that ZZ production via the $gg \to ZZ$ process complement to $Zt\bar{t}$ and tZj productions in measuring the $Zt\bar{t}$ coupling at hadron colliders.

Summary

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