



Contribution ID: 81

Type: Oral presentation using Zoom

Study of photon-associated Higgs production at the ILC

Thursday, 28 October 2021 16:30 (20 minutes)

In the Standard Model (SM), $h\gamma Z$ coupling is a loop induced coupling, therefore it might receive relatively large correction from Beyond Standard Model (BSM) physics. It is very challenging to measure at the HL-LHC, where only 3σ significance is expected for branching ratio of $h \rightarrow \gamma Z$.

On the other hand, $h\gamma Z$ coupling is potentially very sensitive to new physics, for example some new heavy particles contributing to the loop, therefore it is interesting to know how well this coupling can be measured at the International Linear Collider (ILC). More over, it is found $h\gamma Z$ coupling plays an important role in a framework of effective field theory, for example in $e^+e^- \rightarrow Zh$ process it is necessary to know the contribution from s-channel with photon. It turns out that the anomalous $h\gamma Z$, $h\gamma Z$, hZZ and hWW couplings come from a few common set of dimension-6 operators, and $h\gamma Z$ coupling measurement can provide very useful constraints on those operators.

In this talk, we will report the study of $h\gamma Z$ coupling using production channel $e^+e^- \rightarrow \gamma h$, with final results based on the full simulation of ILD. Results will be given for an integrated luminosity of 900 fb^{-1} for polarization at $E_{CM} = 250 \text{ GeV}$.

1st preferred time slot for your oral presentation

15:30-17:30 JST (8:30-10:30 CEST, 2:30-4:30 EDT, 23:30-1:30 PDT)

2nd preferred time slot for your oral presentation

19:00-21:00 JST (12:00-14:00 CEST, 6:00-8:00 EDT, 3:00-5:00 PDT)

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