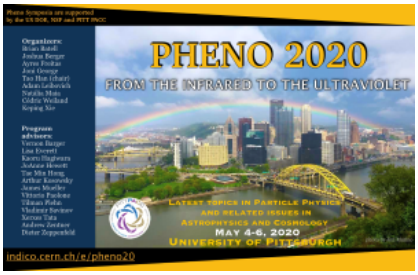

Contribution ID: **939** Type: **Parallel Talk**

A New Precision Process at FCC-hh: the diphoton leptonic Wh channel

Tuesday 5 May 2020 15:15 (15 minutes)

The increase in luminosity and center of mass energy at the FCC-hh will open up new clean channels where BSM contributions are enhanced at high energy. In this paper, we study one such channel, $Wh \to \ell\nu\gamma\gamma$. We estimate the sensitivity to the $\mathcal{O}_{\varphi q}^{(3)}$, $\mathcal{O}_{\varphi \mathrm{W}}$, and $\mathcal{O}_{\varphi \widetilde{\mathrm{W}}}$ SMEFT operators. We find that this channel will be competitive with fully leptonic WZ production in setting bounds on $\mathcal{O}_{\varphi q}^{(3)}$. We also find that the double differential distribution in the p_T^h and the leptonic azimuthal angle can be exploited to enhance the sensitivity to $\mathcal{O}_{\varphi \widetilde{\mathrm{W}}}$.
However, the bounds on $\mathcal{O}_{\varphi \mathrm{W}}$ and $\mathcal{O}_{\varphi \widetilde{\mathrm{W}}}$ we obtain in our analysis, though complementary and more direct, are not competitive with those coming from other measurements such as EDMs and inclusive Higgs measurements.

Summary

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Session Classification: Higgs II

Track Classification: Higgs