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## Determination of CP-violating Higgs couplings with transversely-polarized beams at the ILC

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We study possible CP-violation effects of the Higgs to Z-boson coupling at a future e<sup>+</sup>e<sup>-</sup> collider, e.g. the International Linear Collider (ILC). We find that the azimuthal angular distribution of the muon pair, produced by e<sup>+</sup>e<sup>-</sup> → H Z → H μ<sup>+</sup>μ<sup>-</sup>, can be sensitive to such a CP-violation effect when we apply initial transversely polarized beams. Based on this angular distribution, we construct a CP sensitive asymmetry and obtain this asymmetry by Whizard simulation. By comparing the SM prediction with 2 range of this asymmetry, we estimate the limit of the CP-odd coupling in HZZ interaction, including as well studies from unpolarized and longitudinally-polarized beams.

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