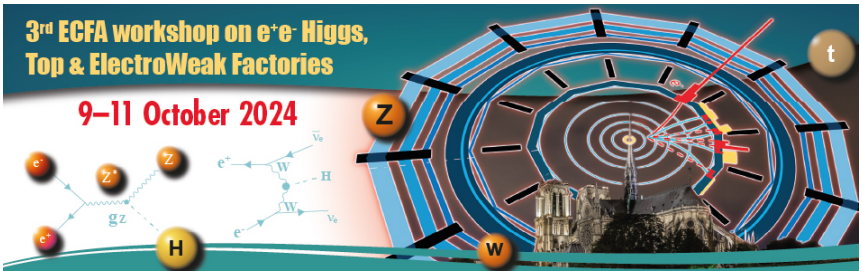

Contribution ID: **70** Type: **POSTER**

CPV measurement in HZZ (VBF) at 1 TeV ILC

Wednesday 9 October 2024 18:32 (2 minutes)

We explore the possibility that CP symmetry is violated in Higgs boson's interactions with Z, assuming that Higgs is produced in ZZ-fusion, at 1 TeV ILC. CPV is generated via mixing of scalar and pseudoscalar states in 125 GeV mass eigenstate. 8 ab−1 of data collected with the ILD detector is simulated in the full simulation (background) and fast simulation of the detector response (signal). It is shown that the
mixing angle between scalar and pseudoscalar states can be measured with the statistical uncertainty of 3.8 mrad at 68% CL, corresponding to 1.44 ·10−5 for the parameter fCP, for measurement of the pure scalar state. This is the first result on sensitivity of an e+e− collider to measure fCP in vector boson fusion Higgs production vertex.

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Track Classification: WG1: WG1-HTE - Physics Potential: Higgs, top and electroweak