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# Transverse polarization and new physics in gamma Z and Higgs Z production

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Transverse polarization of electron and positron beams can be useful because it permits the use of azimuthal asymmetries even when the final state consists of two particles. It is found that with the use of transverse polarization, a CP-odd and T-odd observable can be constructed when the final-state particles are self-conjugate. In the case of HZ production, this observable can be used to probe a certain effective four-point e+e-ZH CP-violating coupling, which is not accessible without transverse polarization. Effective CP-violating ZZH coupling does not contribute to this observable. A similar observable for the case of gammaZ production can be used to probe certain effective CP-violating gammaZV (V= gamma, Z) or e+e-gammaZ four-point couplings.

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