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# Fermion Polarization as a probe of Higgs interactions at a Photon Collider

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We discuss how the CP quantum numbers of a neutral Higgs boson may be probed using fermion polarization at a photon collider. To this aim we construct polarization asymmetries which can isolate the contribution of a Higgs boson phi in gamma gamma -> f fbar, f = tau/t, from that due to the QED continuum. This can help in getting information on the gamma-gamma-phi coupling in case phi is a CP eigenstate. We also construct CP-violating asymmetries which can probe CP mixing in case phi has indeterminate CP. Further, we take the MSSM with CP violation as an example to demonstrate the potential of these asymmetries in a numerical analysis. We find that these asymmetries are sensitive to the presence of a Higgs boson as well as its CP properties over a wide range of MSSM parameters.

**Primary author:** Mr SINGH, Ritesh (LPT Orsay, France)

**Presenter:** Mr SINGH, Ritesh (LPT Orsay, France)

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