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Optimal observables as a probe of CP violation in the $q\bar{q} \to Z\gamma \to \nu\bar{\nu}\gamma$ process

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A possible CP violation effects in neutral currents are predicted in a wide class of theories Beyond the Standard Model (BSM). If such a violation will be discovered, it may shed light on the problem of the baryon asymmetry of the Universe. In this paper, an effective field theory (EFT) approach is used to parameterize the BSM $Z\gamma$ interaction. The optimal observables technique is applied to probe the CP violating EFT operator within the nTGC phenomenological model. Several cut requirements on the photon transverse momentum p_T were considered in order to enhance the possible BSM signal.

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