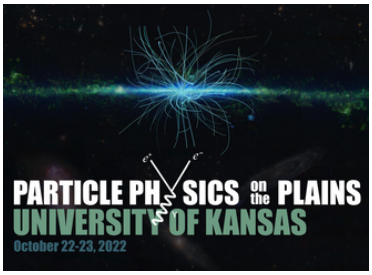

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Scalar decays in Type II seesaw model

Sunday 23 October 2022 12:35 (20 minutes)

In the type II seesaw model, there are seven physical Higgs states in mass basis and those can be categorized as charged Higgs bosons ($H^{\pm}$, $H^{\pm\pm}$) and the neutral Higgs bosons (A^0, H^0,h^0). At LHC, one of the primary ways to search for Higgs is via its decay to two photons. We studied the two-photon decay channel of SM-like component (H^0) of CP-even Higgs bosons and the pseudo scalar (A^0) in CP-odd bosons. For these loop-induced processes, we used computer-algebraic methods to generate Feynman diagrams and to obtain analytic expressions for ($H^0\to$) and ($A^0\to$). Some numerical results given by the analytic expression under the potential stability bounds condition for the $H^0\to$ process were compared with the SM.

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