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A light boson search at linear colliders

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A light pseudoscalar in extended Higgs sector provides solution to muon anomalous magnetic moment and/or dark matter. We explore the prospect of Yukawa production of such a light boson which can exist in an extended Higgs sector like 2HDM. Considering ILC "Higgs factory" with CM Energy of 250 GeV, we show that the available parameter space can be examined by the (tau) Yukawa process at 5 sigma with integrated luminosity of 2000 fb inverse. It is also possible to reconstruct mass of such a light particle at lepton colliders through multi tau final state.

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