

Abstract Submitted
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Search for Fermiophobic Higgs in the 4-gamma + X Final State

ATSUNARI HAMAGUCHI, Osaka City University — We present a search for fermiophobic Higgs(h_f) which does not interact with fermions in a Type I 2-Higgs Doublet Model. In Type I 2HDM one Higgs doublet does not couple to all fermion types, while the other doublet does. Previous fermiophobic Higgs bosons searches have not been able to exclude the scenario of a very light h_f and large $\tan\beta$ which is the ratio of the vacuum expectation values of the two Higgs doublets. However the process $p\bar{p} \rightarrow H^\pm h_f$ is allowed in such scenarios and enables us to search for this light h_f . We use the channel $p\bar{p} \rightarrow H^\pm h_f \rightarrow W^* h_f h_f \rightarrow 4\gamma + X$.

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