

Abstract Submitted
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Search for Light Higgs and Low Mass Dark Matter at Belle ILSOO

SEONG, University of Hawaii at Manoa — We report a search for a light CP-odd Higgs boson A^0 , which can be produced in Υ transitions and decay to low mass Dark Matter (DM). We search for evidence of on-shell and off-shell production of the light Higgs in $\Upsilon(1S)$ decays via tagged dipion transitions from $\Upsilon(2S)$ to $\Upsilon(1S)$. We present the first Belle search for final states with a single high energy photon and missing energy in the mass range $M_{A^0} \leq 9.2$ GeV and $M_{DM} \leq 4.5$ GeV with a data sample of 157.3×10^6 $\Upsilon(2S)$ decays. We also discuss the implications of our results for direct dark matter searches.

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