

Abstract Submitted  
for the APR15 Meeting of  
The American Physical Society

**Search for dark particles at Belle (II)** IGAL JAEGLER, University of Hawaii at Manoa, BELLE (II) COLLABORATION — We will present a search for the dark photon,  $A'$ , and the dark Higgs boson,  $h'$ , in the so-called Higgsstrahlung channel,  $e^+e^- \rightarrow A'h'$ , with  $h' \rightarrow A'A'$ . We investigated ten exclusive final-states with  $A' \rightarrow e^+e^-$ ,  $\mu^+\mu^-$ , or  $\pi^+\pi^-$ , in the mass ranges  $0.1 \text{ GeV}/c^2 < m_{A'} < 3.5 \text{ GeV}/c^2$  and  $0.2 \text{ GeV}/c^2 < m_{h'} < 10.5 \text{ GeV}/c^2$ . We also investigated three inclusive final-states,  $2(e^+e^-)X$ ,  $2(\mu^+\mu^-)X$ , and  $(e^+e^-)(\mu^+\mu^-)X$ , where  $X$  denotes a dark photon candidate detected via missing mass, in the mass ranges  $1.1 \text{ GeV}/c^2 < m_{A'} < 3.5 \text{ GeV}/c^2$  and  $2.2 \text{ GeV}/c^2 < m_{h'} < 10.5 \text{ GeV}/c^2$ . Using the entire  $977 \text{ fb}^{-1}$  data set collected by Belle, we observed no significant signal. We will also discuss prospects for searches for the light dark matter and the dark photon in the radiative decay process at Belle and Belle II.

Igal Jaegle  
University of Hawaii at Manoa

Date submitted: 07 Jan 2015

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