

# Sensitivity to the $X(3872)$ total width at the Belle II experiment

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The Belle II experiment at the SuperKEKB energy-asymmetric  $e^+e^-$  collider is a substantial upgrade of the B factory facility at the Japanese KEK laboratory. The design luminosity of the machine is  $8 \times 10^{35} \text{ cm}^{-2} \text{ s}^{-1}$  and the Belle II experiment aims to record  $50 \text{ ab}^{-1}$  of data, a factor of 50 more than its predecessor. From February to July 2018, the machine has completed a commissioning run and main operation of SuperKEKB has started in March 2019. The  $X(3872)$  is an exotic hadron candidate and studying the  $X(3872)$  partial widths is a good probe for the internal structure of this hadronic state. However, in order to derive partial widths, a measurement of its total width is needed. The large Belle II data set will provide an ideal environment to measure the  $X(3872)$  total width since it will be possible to use the  $X(3872) \rightarrow D^0 \bar{D}^0 \pi^0$  decay, which has a better mass resolution than  $X(3872) \rightarrow J/\psi \pi^+ \pi^-$  used in earlier work. In this presentation, we will give an overview of the analysis and the expected sensitivity to the  $X(3872)$  total width

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