Exotic and Conventional Quarkonium Physics Prospects at Belle II

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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 $8 \times 10^{35}$ cm$^{-2}$s$^{-1}$ and the Belle II experiment aims to record 50 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. Belle II is uniquely capable of studying the so-called “XYZ” particles: heavy exotic hadrons consisting of more than three quarks. First discovered by Belle, these now number in the dozens, and represent the emergence of a new category within quantum chromodynamics. This talk will present the prospects of Belle II to explore both exotic and conventional quarkonium physics.

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