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Recent results on exotic quarkonium states from Belle

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Recent observations of charged charmonium-like states have opened an interesting landscape in the field of hadron spectroscopy. Continuing with its tradition, Belle recently observed a new charged charmonium-like state $Z_c(4200)$ and obtained an evidence for $Z_c(4430) \rightarrow J/\psi\pi^+$ in $B \rightarrow J/\psi\pi K$ decays. Belle also found the first evidence for a new charged state $Z_c(4020)^+$ in their updated study of ISR decay, $e^+e^- \rightarrow \pi\pi\psi(2S)$. Along with this, we also present the first observation of $B^0 \rightarrow X(3872)K^+\pi^-$ decay mode, the search for $X(3872)/\chi_{c1}(2P)$ in $B^+ \rightarrow \chi_{c1}\pi^+\pi^-K^+$, and the search for $X(3872)$ -like states, $Z_c(3900)^0$, $X(3915)$ and $Z_c(4020)^0$ in the final states with ηc meson in the B decays.

We also report recent results on the spectroscopy of charged and vector bottomonium-like states at Belle. These include new decay channels of the Z_b bottomonium-like resonances in the dataset taken at the $Y(10860)$, studies of resonant substructure in three-body decays at the $Y(11020)$, and the observation of η transitions from $Y(4S)$ and $Y(10860)$ to $Y(1S,2S)$ and $hb(1P,2P)$ states, as well as $Y(10860) \rightarrow \eta/\pi^+\pi^-Y(1D)$. We also investigate the dependence of production rates on the center-of-mass energy in the regions of $Y(10860)$ and $Y(11020)$ for several types of $b\bar{b}$ events, both with bottomonia and open-b states, and consider the implications for the masses and widths of $Y(10860)$ and $Y(11020)$.

additional information

Submitted on behalf of the Belle collaboration.

Actual presenter will be selected by the Belle collaboration at a later time.

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