ICHEP2012



Contribution ID: 727

Type: Parallel Sessions

Charmonium and exotic particles at Belle

Thursday 5 July 2012 15:15 (15 minutes)

We present the study of narrow charmonium (-like) resonances by $\chi_{c1,c2}\gamma$ final states in $B \to \chi_{c1,c2}\gamma K$ decays at Belle. The results are based on the full $\Upsilon(4S)$ data sample corresponding to $772 \times 10^6 B\bar{B}$ pairs recorded by the Belle detector at the KEKB asymmetric-energy e^+e^- collider.

We present the study of $B^{\pm} \rightarrow J/\psi \eta K^{\pm}$ decays at Belle. Along with the branching fraction measurement, we search for narrow charmonium-like resonances in the $J/\psi \eta$ final state. The analysis is based on the full $\Upsilon(4S)$ data set corresponding to $772 \times 10^6 B\bar{B}$ pairs collected by the Belle detector at the KEKB asymmetricenergy e^+e^- collider.

We present the results of an amplitude analysis of the decay $\bar{B}^0 \rightarrow J/\psi K^- \pi^+$. A search for charged charmonium-like states in the $J/\psi \pi^+$ system has been performed. The analysis is based on a 711 fb⁻¹ data sample collected by the Belle detector at the KEKB asymmetric-energy e^+e^- collider.

The cross section for $e^+e^- \rightarrow J/\psi \eta$ between $\sqrt{s} = 3.8$ GeV and 5.3 GeV is measured using 980 fb⁻¹ of data on and off the $\Upsilon(nS)$ resonances collected with the Belle detector at the KEKB asymmetric-energy e^+e^- collider. Two resonant structures at the $\psi(4040)$ and $\psi(4160)$ are observed in the $J/\psi \eta$ invariant mass distribution. The transition rates of $\psi(4040)$ and $\psi(4160)$ to the $J/\psi \eta$ final state are measured. This is the first measurement of this hadronic transition mode. No significant signals of the Y(4008), Y(4260), Y(4360), or Y(4660) are observed in the $J/\psi \eta$ final state.

We search for a doubly charmed tetraquark (T_{cc}) using a large data sample collected with the Belle detector at the KEKB asymmetric-energy e^+e^- collider. Various hadronic models, which are in good agreement in the baryon and meson sectors, show different results for tetraquarks. The production of T_{cc} plays a crucial role for discriminating among these models.

We report preliminary results of a search for decays of an exotic state X to various modes with the η_c meson: $\eta_c \pi^+ \pi^-$, $\eta_c \omega$, $\eta_c \eta$, and $\eta_c \pi^0$. The analysis is based on a data sample of $772 \times 10^6 B\bar{B}$ pairs collected at the $\Upsilon(4S)$ resonance with the Belle detector at the KEKB asymmetric-energy e^+e^- collider.

Author: Dr YABSLEY, Bruce (University of Sydney (AU))

Presenter: Dr YABSLEY, Bruce (University of Sydney (AU))

Session Classification: TR5 & TR7 - Room 220 - B Physics and CP Violation, etc.

Track Classification: Track 7. CP Violation, CKM, Rare Decays, Meson Spectroscopy