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## Charmonium and Charmonium-like States with BABAR

*Friday, August 12, 2011 4:00 PM (20 minutes)*

We present a search for the  $X(3872)$  produced in  $B \rightarrow \psi \pi^+ \pi^- K$  and  $B \rightarrow \psi \pi^+ \pi^- \pi^0 K$  ( $\psi = J/\psi$  or  $\psi(2S)$ ) using 427 fb<sup>-1</sup> of BaBar data. We present updated mass and width measurements for the  $Y(4260) \rightarrow J/\psi \pi^+ \pi^-$  produced in Initial State Radiation events using 454 fb<sup>-1</sup> of data. We report the study of the B meson decays  $B^+ \rightarrow J/\psi \phi K^+$  and  $B^0 \rightarrow J/\psi \phi K_S$ , and of charged and neutral B decays to  $\chi_{c1} K \pi$ . We describe a detailed study of charmonium states produced in two-photon collisions and decaying to  $K_S K \pi$  and  $K K \pi \pi^0$ . We present a high statistics measurement of the mass and width of the  $\eta_{c2}(2S)$  state.

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**Session Classification:** Hadron Spectroscopy

**Track Classification:** Hadron Spectroscopy