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Studies of Radiative Decays and Search for X(3872) at BABAR

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- A study of radiative Upsilon(2S) and Upsilon(3S) transitions using converted photons We present a study of the radiative transitions from decays of the Upsilon(2S) and Upsilon(3S) resonances using photons that have converted into an e+e- pair. This study uses data collected with the BABAR detector operating at the SLAC PEP-II B-factory on the Upsilon(2S) and Upsilon(3S) resonances.
- Search for f_{J(2220)} Production in Radiative J/psi Decays We present a search for f_{J(2220)} production in radiative J/psi → gamma f_{J(2220)} decays using 460 fb⁻¹ of data collected with the BaBar detector at the PEP-II storage rings. The f_{J(2220)} is reconstructed in the decays f_{J(2220)} → K+K- and f_{J(2220)} → K_S⁰ K_S⁰. No evidence of this resonance is observed and 90% confidence level upper limits on the J/psi → gamma f_{J(2220)}, f_{J(2220)} → K+ K- and J/psi → gamma f_{J(2220)}, f_{J(2220)} → K_S⁰ K_S⁰ branching fractions are set at the level of 10⁻⁵.
- The search for new X(3872) decay modes and for the Z1 and Z2 states in chi_{c1} pi We present a search for the X(3872) produced in B → psi pi+pi- K and B → psi pi+pi-pi⁰ K (psi=J/psi or psi(2S)) using 427 fb⁻¹ of BaBar data. We also report on a search for the Z1 and Z2 states in the chi_{c1} pi invariant-mass distribution at BaBar. We perform a study of charged and neutral B decays to chi_{c1} K pi. The aim is to search for the two resonance-like structures, the Z1 and Z2, first observed by the Belle experiment in the chi_{c1} pi+ invariant-mass distribution near 4.1 GeV in exclusive B⁰ → chi_{c1} K-pi+.

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