



Contribution ID: 554

Type: **Parallel Talk**

Recent QCD results from the BaBar experiment

Saturday 8 July 2017 09:45 (15 minutes)

We report some of the most recent results in studying different aspects of QCD with about 500 fb^{-1} of data collected by the BaBar experiment at the e^+e^- B -factory PEP-II.

In particular, we present Dalitz plot analyses of the hadronic three-body J/ψ decays to $\pi^+\pi^-\pi^0$, $K^+K^-\pi^0$, and $K_S K^\pm \pi^\mp$ using an isobar model and a Veneziano model. We then show the results of a search for the B -meson decay to four baryons $B \rightarrow p\bar{p}p\bar{p}$, which might help shedding some light on the mechanism of hadron fragmentation into baryons, and on the experimental difference between the inclusive branching fraction of B -meson decay to baryons and the sum of the exclusive baryonic B decays. We also present a high precision measurement of the mass difference between the $D^*(2010)^+$ and D^+ mesons using the decay chain $D^*(2010)^+ \rightarrow D^+\pi^0$, with $D^+ \rightarrow K^-\pi^+\pi^+$, which largely improve the knowledge of this parameter.

Experimental Collaboration

BABAR

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