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Search for the B -meson decay to four baryons $B \rightarrow p\bar{p}p\bar{p}$ at BaBar

B mesons are the lightest mesons which can decay to various final states containing different baryons. Up to now, the discrepancy between the inclusive branching fraction of all B meson decay modes with at least a couple of baryons in the final state, measured by ARGUS to be $(6.8 \pm 0.6)\%$, and the sum of exclusive baryonic channels, averaged on neutral and positive B mesons at less than 1%, represents an open issue. The measurement and comparison of exclusive branching fractions of baryonic B decays as well as studies on the dynamic of the decay, may allow better understanding of baryon production in B decays and, more generally, hadron fragmentation into baryons. We present here a search for the decay of a B meson in four baryons: $B \rightarrow p\bar{p}p\bar{p}$, not yet observed.

The data set consists of about 470 million $B\bar{B}^*$ pairs collected with the BaBar detector at the SLAC National Accelerator Laboratory.

Experimental Collaboration

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