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Search for B Mesogenesis and Dark matter at $BABAR$.

We present the most recent $BABAR$ searches for reactions that could simultaneously explain the presence of dark matter and the matter-antimatter asymmetry in the Universe. This scenario predicts exotic B-meson decays into an ordinary-matter baryon and a dark-sector anti-baryon ψ_D with branching fractions accessible at the B factories.
The results are based on the full data set of about 430 fb^{-1} collected at the $\Upsilon(4S)$ resonance by the $BABAR$ detector at the PEP-II collider.
We search, in particular, for decays like $B \to \psi_D calB$ where
$calB$ is a baryon (proton, Λ, or Λ_c). The hadronic recoil method has been applied with one of the B mesons from $\Upsilon(4S)$ decay fully reconstructed, while only one baryon is present in the signal B-meson side. The missing mass of signal B meson is considered as the mass of the dark particle ψ_D. Stringent upper limits on the decay branching fraction are derived for ψ_D masses between 0.5 and 4.3 GeV/c^2.

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