

Search for lepton flavor violation in $Y(3S) \rightarrow e\mu$ at BABAR

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We report on the first search for electron-muon flavor violation in the decay of a b quark and anti-b quark bound state. A search for the LFV decay $Y(3S) \rightarrow e\pm\mu\mp$ in a sample of 118 million $Y(3S)$ mesons from 27 fb^{-1} of data collected with the BABAR detector at the SLAC PEP-II e^+e^- collider operating with a 10.36 GeV center-of-mass energy revealed no signal. We set a limit on the branching fraction $B(Y(3S) \rightarrow e\pm\mu\mp) < 3.6 \times 10^{-7}$ at 90% CL. This can be interpreted as a limit on the energy scale divided by coupling of relevant new physics (NP) processes of $\Lambda_{\text{NP}}/g_{\text{NP}} > 80\text{ TeV}$.

What is your topic?

Lepton universality and flavour violation

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