

## Precision measurement of the $B[Y(3S) \rightarrow \tau^+\tau^-] / B(Y(3S) \rightarrow \mu^+\mu^-)$ ratio at BABAR

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We report on a precision measurement of the ratio  $R^Y(3S)_{\tau\mu} = B[Y(3S) \rightarrow \tau^+\tau^-] / B[Y(3S) \rightarrow \mu^+\mu^-]$  using data collected with the BaBar detector at the SLAC PEP-II  $e^+e^-$  collider. The measurement is based on a 28 fb<sup>-1</sup> data sample collected at a center-of-mass energy of 10.355 GeV corresponding to a sample of 122 million  $Y(3S)$  mesons. The ratio is measured to be  $R^Y(3S)_{\tau\mu} = 0.966 \pm 0.008$  (stat)  $\pm 0.014$  (syst) and is in agreement with the Standard Model prediction of 0.9948 within 2 standard deviations. The uncertainty in  $R^Y(3S)_{\tau\mu}$  is almost an order of magnitude smaller than the only previous measurement.

### What is your topic?

Lepton universality and flavour violation

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