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Beyond-SM searches in $B \rightarrow D^{(*)} \tau \nu$ and rare decays at BaBar

Thursday 19 September 2013 16:00 (30 minutes)

We present the measurement of the $B \rightarrow D^{(*)} \tau \nu$ decay, which is sensitive at tree level to New Physics in the form of a charged Higgs boson.

The measured branching fraction is 3.4 sigma larger than the SM predictions, and excludes the 2HDM of type 2 at 99.88% confidence for all $\tan(\beta)/m_{\text{Higgs}}$ values.

Additional studies of the momentum transferred to the lepton system show that the result can be accommodated by more general two-Higgs-Doublet models.

Searches for rare decays sensitive to New Physics, as radiative and electroweak penguin decays are also reported.

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