

# LEPP Journal Club

Friday, Sep 9, 2011. 4:00 pm (3:45 refreshments)  
701 Clark Hall (Note Special Location!)



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**First two-sided limit of  $B_s \rightarrow \mu^+ \mu^-$**

The decays of  $B_s$  and  $B^0$  mesons into  $\mu^+\mu^-$  are examples of flavor-changing neutral current processes that can occur in the Standard Model (SM) only through higher-order loop diagrams. Their branching fractions are predicted in the SM with good precision. A wide variety of beyond-SM theories predict significant increases over the SM branching

fraction, making the study of these decays one of the most sensitive indirect searches for new physics. A search for  $B^0$  and  $B_s \rightarrow \mu^+\mu^-$  decays was performed using  $7 \text{ fb}^{-1}$  of integrated luminosity collected by the CDF II detector at the Fermilab Tevatron collider. This result from CDF, as well as related results from CMS, LHCb, and theoretical implications, will be discussed in an informal setting.

