



Contribution ID: 273

Type: not specified

## Neutral B meson mixing with 2+1 flavor domain-wall light and static heavy quarks

*Tuesday, 15 June 2010 17:20 (20 minutes)*

The  $B^0$ -anti- $B^0$  mixing parameter for the  $B_d$  and  $B_s$  meson is calculated using the domain-wall fermions (DWF) for the light quarks and improved static fermions for the b quark on the  $1/a \sim 1.7$  GeV  $n_f=2+1$  Iwasaki-DWF ensembles. The static approximation has the sizable  $\Lambda/m_h$  leading systematic error. The systematic error for the  $SU(3)_f$  breaking ratio, however, is suppressed by another factor of  $(m_d - m_s)/\Lambda$ , thus is 2% with a naive estimate. The results will eventually be combined with those on a finer lattice to have continuum extrapolation, where the use of two different smearings in the static quark action and the  $O(g^2 a)$  improvement of the operators will provide various cross checks.

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talk

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