



Contribution ID: 359

Type: **Talk**

KI - Ks mass difference computed with a 171 MeV pion mass

Monday, 23 June 2014 17:50 (20 minutes)

In this work, I used a $32^3 \times 64 \times 32$, 2+1 flavor domain wall lattice with Iwasaki+DSDR gauge action. The pion mass is 171 MeV and the kaon mass is 492 MeV. We implement the Glashow-Iliopoulos-Maiani (GIM) cancellation using charm quark masses of 750 MeV and 592 MeV. This is an intermediate calculation, in that we are using both a coarse lattice spacing ($1/a = 1.37\text{GeV}$) so we expect significant discretization error coming from charm quark mass and we are also using unphysical kinematics for the pion. The main purpose of this calculation is to identify the contribution from the two pion intermediate state when the energy of a two pion state is smaller than that of the kaon.

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Session Classification: Weak Decays and Matrix Elements

Track Classification: Weak Decays and Matrix Elements