



Contribution ID: 372

Type: **Talk**

D meson semileptonic form factors with HISQ valence and sea quarks

Friday, July 29, 2016 3:20 PM (20 minutes)

We present a calculation of the form factors of the $D \rightarrow Kl\nu$ and $D \rightarrow \pi l\nu$ semileptonic decays at zero momentum transfer, ultimately for the purpose of determining the CKM matrix elements $|V_{cs}|$ and $|V_{cd}|$. This work uses MILC $N_f = 2 + 1 + 1$ configurations with the HISQ action for both sea quarks and valence quarks, including several physical mass ensembles and lattice spacings down to $0.042fm$. The calculation is done directly at $q^2 = 0$ by employing twisted boundary conditions to tune the child particle momenta. Preliminary results at the physical point and in the continuum limit are achieved through the use of Heavy-Meson Staggered χ PT.

Primary author: Prof. GOTTLIEB, Steven (Indiana University)

Co-authors: EL-KHADRA, Aida (University of Illinois); BAZAVOV, Alexei (Indiana University); Dr KRONFELD, Andreas (Fermilab); DETAR, Carleton (University of Utah); Dr BOUCHARD, Chris (William & Mary); BERNARD, Claude (Washington University); DU, Daping (Syracuse University); Mr TOUSSAINT, Doug (University of Arizona); Dr GAMIZ, Elvira (University of Granada); NEIL, Ethan (University of Colorado, Boulder); LAIHO, Jack (Syracuse University); KOMIJANI, Javad (TUM); SIMONE, Jim (Fermilab); MACKENZIE, Paul (Fermilab); SUGAR, Robert (University of California, Santa Barbara); VAN DE WATER, Ruth (Fermilab); HELLER, Urs (American Physical Society); ZHOU, ran (Fermi National Accelerator Laboratory)

Presenter: Prof. GOTTLIEB, Steven (Indiana University)

Session Classification: Weak Decays and Matrix Elements

Track Classification: Weak Decays and Matrix Elements