Calculation of $K \to \pi l \nu$ form factor in $N_f = 2 + 1$ QCD at physical point on $(10\mathrm{fm})^3$ volume

Wednesday, 25 July 2018 14:20 (20 minutes)

We present our preliminary result of the form factor of $K \to \pi l \nu$
semileptonic decays on the large volume configuration, $L \approx 10$ fm,
with the physical m_π and m_K using the stout-smearing
clover quark and Iwasaki gauge actions at $a^{-1} = 2.333$ GeV.
From an interpolation using the data in small momentum transfers,
we determine the semileptonic decay form factors at zero momentum transfer.
The result is compared with the previous lattice calculations.
We also estimate the value of $|V_{us}|$ by combining our result
with the experimental value of the kaon semileptonic decay.

Primary author: Mr KAKAZU, Junpei (Univ. of Tsukuba)

Co-authors: Dr ISHIKAWA, Ken-Ichi (Graduate School of Science, Hiroshima University);   Dr ISHIZUKA, Naruhito (CCS University of Tsukuba);   YAMAZAKI, Takeshi (Univerity of Tsukuba);   Prof. KURAMASHI, Yoshinobu (University of Tsukuba);   Dr NAMEKAWA, Yusuke (University of Tsukuba);   Prof. TANIGUCHI, Yusuke (University of Tsukuba);   UKITA, naoya (Tsukuba University);   Dr YOSHIE, tomoteru (CCS University of Tsukuba);   Dr NAKAMURA, yoshifumi (RIKEN CCS)

Presenter: Mr KAKAZU, Junpei (Univ. of Tsukuba)

Session Classification: Weak Decays and Matrix Elements

Track Classification: Weak Decays and Matrix Elements