38th INTERNATIONAL CONFERENCE
ON HIGH ENERGY PHYSICS
AUGUST 3 - 10, 2016
CHICAGO

Contribution ID: **1418** Type: **Poster**

Light Flavor Physics from Domain Wall Lattice QCD

Monday 8 August 2016 18:30 (2 hours)

Lattice calculations of low energy QCD matrix elements are an important ingredient in precision tests of Standard Model physics. In this talk we will report on some of the RBC-UKQCD collaboration's recent calculations with physical quark masses, relevant to light flavor physics — including the pion and kaon decay constants, the Kl3 form factors, and the kaon bag parameter — and their implications for CKM matrix elements. Our domain wall fermion simulations, which preserve the chiral symmetries of continuum QCD on the lattice, also allow for determinations of the low energy constants of chiral perturbation theory. We present low energy constants from fits of our data to both NLO and NNLO SU(2) and SU(3) chiral perturbation theory, discuss the reliability of the chiral expansion, and use the low energy constants we obtain to predict various physical quantities.

Author: MURPHY, David (Columbia University)

Presenter: MURPHY, David (Columbia University)

Session Classification: Poster Session

Track Classification: Quark and Lepton Flavor Physics