Contribution ID: **337** Type: **Parallel**

B and D Meson Leptonic Decay Constants and Quark Masses from Four-Flavor Lattice QCD

Friday, 1 June 2018 14:30 (30 minutes)

We describe a recent lattice-QCD calculation of the leptonic decay constants of heavy-light pseudoscalar mesons containing charm and bottom quarks and of the masses of the up, down, strange, charm, and bottom quarks. Results for these quantities are of the highest precision to date. Calculations use over twenty isospin-symmetric ensembles of gauge-field configurations with six different lattice spacings down to approximately 0.03 fm and several values of the light-quark masses down to physical values of the average up and down sea-quark masses. We use the highly-improved staggered-quark (HISQ) formulation for valence and sea quarks, including the bottom quark. The analysis employs heavy-quark effective theory (HQET). A novel HQET method is used in the determination of the quark masses.

E-mail

detar@physics.utah.edu

Collaboration name

Fermilab Lattice, MILC, and TUMQCD

Funding source

DOE, NSF, MINECO (Spain), Junta de Andalucia (Spain), DFG (Germany), SFTC (UK), German Excellence Initiative, EU Seventh Framework, EU Marie Curie COFUND

Primary author: DETAR, Carleton (University of Utah)

Co-authors: Prof. EL-KHADRA, Aida (University of Illinois at Urbana-Champaign); Dr BAZAVOV, Alexei (Michigan State University); Dr KRONFELD, Andreas (Fermilab); Prof. VAIRO, Antonio (Technical University, Munich); Prof. BERNARD, Claude (Washington University); Prof. TOUSSAINT, Doug (University of Arizona); Prof. GAMIZ, Elvira (Univ. Granada); Prof. NEIL, Ethan (University of Colorado); Dr SIMONE, James (Fermilab); Dr KOMIJANI, Javad (Technical University, Munich); Prof. LAIHO, John (Syracuse University); Dr BROWN, Nathan (Washington University); Prof. BRAMBILLA, Nora (Technical University, Munich); Dr MACKENZIE, Paul (Fermilab); Prof. SUGAR, Robert (UC Santa Barbara); Dr VAN DE WATER, Ruth (Fermilab); Prof. GOTTLIEB, Steven (Indiana University); Dr HELLER, Urs (APS)

Presenter: DETAR, Carleton (University of Utah)

Session Classification: Heavy Flavors and the CKM Matrix

Track Classification: HFCKM