

APR12-2012-020104

Abstract for an Invited Paper
for the APR12 Meeting of
the American Physical Society

Flavor physics and CKM matrix elements

RAN ZHOU, Indiana University

Flavor physics plays an important role in checking the Standard Model and searching for new physics. Flavor physics calculations typically require hadronic matrix elements that require non-perturbative understanding of QCD. Lattice QCD now provides the means to accurately calculate these matrix elements from first principles. In this talk, I will first introduce lattice methods for calculation of hadronic matrix elements, and their application to flavor physics. Different lattice actions and their associated errors will be reviewed. Then the lattice results on B, Bs, D and Ds decay constants will be summarized and compared with experimental values. Next, I will focus on the the lattice determination of CKM matrix elements through B,D and K meson semileptonic decays. Finally, I will talk about the lattice study of the $B \rightarrow K/K^* \bar{l}l$ process and it's implication for the search for new physics.