KMI - Theory Seminar

Monday, July 23, 2012

5:00 pm, KMI Science Symposia (ES-635)

“Heavy hadron axial couplings from lattice QCD”

David Lin

Institute of Physics, National Chiao-Tung University

Abstract:

The LHC will reinvigorate physics of the b-hadrons with a large amount of experimental data, in particular for the single-b baryons. To make use of these data in flavour physics and CKM-related topics, it is essential to have good control of the non-perturbative QCD effects. In this talk, I present a recent determination of the axial couplings amongst single-b hadrons and pions. This calculation was performed using next-to-leading order chiral perturbation theory and lattice QCD at pion masses between 227 MeV and 352 MeV with 2+1 flavours of dynamical fermions. These couplings are important quantities for controlling chiral extrapolations for all lattice computations of b-hadron spectrum and matrix elements. They can also be used to predict decay widths of these heavy hadrons.