APR15-2014-000106

Abstract for an Invited Paper
for the APR15 Meeting of
the American Physical Society

Results in Quark Flavor Physics[1]

SHELDON STONE, Syracuse University

Heavy quarks are unstable and transform into lighter ones. The basic interaction that governs the decay is electroweak with the known γ, $W^{\pm}$ and Z^0 particles acting as virtual force carriers. New interactions, such as supersymmetry, would have new, possibly much heavier, carrier particles that would interfere with the known particles affecting both decay rates and CP violating asymmetries. Studies of b-quark, c-quark, and s-quark decays thus far have provided both generic limits on new forces and limits on specific models of new physics beyond the Standard Model. These will be discussed as well as a few experimental anomalies that could be the first indicators of new phenomena.

[1]Work supported by the NSF