SEMPARIS – Séminaires en région parisienne

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Seminar of the theory group of APC

Mardi 19 Juin 2018, 14 :00
APC, 483 A - Malevitch
Domaines : hep-th

Titre : *Fermion masses, quark mixing and Flavor Changing Neutral Currents from a gauged $SU(3)_F$ family symmetry*

Orateur : **Albino Hernandez Galeana (University of Mexico)**

Résumé : *Within a broken local gauge vector-like $SU(3)_F$ family symmetry, we address the problem of quark masses and mixing, and study some rare flavor violating processes induced by the new gauge bosons, which can generate transitions between different families and so introduce "Flavor Changing Neutral Currents"(FCNC) couplings at tree level. We find out that some of the most dangerous FCNC processes, like for instance ; $K^o - \bar{K^o}$, $D^o - \bar{D^o}$ mixing, may be properly suppressed if the first stage of the Spontaneous Symmetry Breaking (SSB), $SU(3)_F \to SU(2)_F$, occurs at a high scale $\Lambda \sim 10^{11}$ GeV, with a proper alignment of the $SU(2)_F$ gauge bosons of the order of some or several TeV's. This proposed scenario of breaking the $SU(3)$ family symmetry allows the possibility of defining a global $U(1)$ symmetry, which could play the role of a Peceei-Quinn symmetry to address the strong CP problem.*