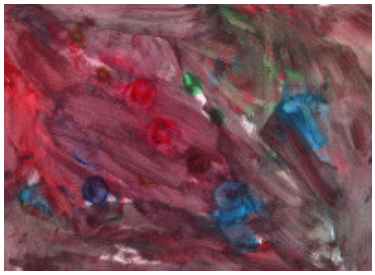

ID de Contribution: **13** Type: **Non spécifié**

Connecting Flavor and EWSB: A Heavy Q and a Light Dilaton

jeudi 26 novembre 2015 10:30 (30 minutes)

There is nothing wrong with a 4th generation of quarks, except for the Higgs cross section. Along the recent questioning of the nature of "Higgs boson" by Phil Anderson, we advocate that what is observed may still be a Dilaton. This may seem to run against the recent ATLAS-CMS combination that claims VBF to be above 5sigma. We caution that combining potential bias(es) is dangerous, while the source of EWSB is too important an issue to be cavalier about. We should wait for LHC Run 2 data to unfold. Yukawa couplings are the source of known flavor physics, and range from ~ 0.00003 for u-quark, to ~ 1 for top. We conjecture the effect for near "extremum" value at 4pi, since direct search bounds on 4G quark Q have reached beyond unitarity bound. Through an empirical, self-consistent no-scale equation which is beyond NJL model, dynamical EWSB can occur at this extremum, thereby permitting a Dilaton to emerge from ultra-strong Yukawa dynamics, even though the Yukawa coupling itself remains an enigma. Mixing of Q with light quarks may touch Bq -> mu+mu-, KL -> pi0nunu and sin(2phi1/beta) in B0 -> J/psi phi, while sin(phis) ~ 0 is permitted. There is enough CPV for the matter asymmetry of the Universe! A consistent picture may emerge from the confluence of measurements in the next few years, with the possibility of observing "fireballs" of high multiplicty multi-V (or Goldstone boson) production, which would become a certainty at higher energy proton colliders.

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