



Séminaire commun LAL et LPT

George Zoupanos

National Technical University - Athens, Greece

Vendredi 15 Fevrier 2013 à 11 :00

Finite Theories after the discovery of a Higgs-like boson at the LHC

Finite Unified Theories (FUTs) are $N = 1$ supersymmetric Grand Unified Theories (GUTs) which can be made finite to all-loop orders, based on the principle of reduction of couplings, and therefore are provided with a large predictive power. Confronting the predictions of $SU(5)$ FUTs with the top and bottom quark masses and other low-energy experimental constraints a light Higgs-boson mass in the range $M_h \sim 121-126$ GeV was predicted, in striking agreement with the recent discovery of a Higgs-like state around ~ 125.7 GeV at ATLAS and CMS. Furthermore the favoured model, a finiteness constrained version of the MSSM, naturally predicts a relatively heavy spectrum with coloured supersymmetric particles above ~ 1.5 TeV, consistent with the non-observation of those particles at the LHC. Restricting further the best FUT's parameter space according to the discovery of a Higgs-like state and B-physics observables we find predictions for the rest of the Higgs masses and the s-spectrum.

Auditorium Pierre Lehmann du LAL - Bât. 200, Orsay

Thé et café seront servis 1/4 h avant le séminaire



Responsables : N.Delerue (seminaires@lal.in2p3.fr) et D.Becirevic (damir.becirevic@th.u-psud.fr)
<http://www.lal.in2p3.fr>