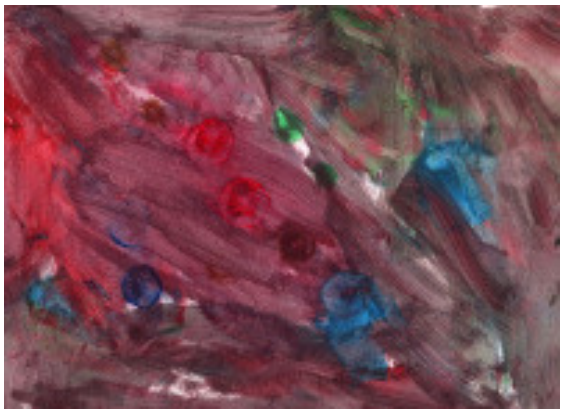
LIO international conference on Flavour, Composite models and Dark matter



Rapport sur les contributions

https://indico.in2p3.fr/e/lio2015fcd

ID de Contribution: **0** Type: **Non spécifié**

Theoretical Predictions for the Weak Radiative B-Meson Decays

Orateur: MISIAK, Mikolaj

ID de Contribution: **1** Type: **Non spécifié**

Theoretical Predictions for the Weak Radiative B-Meson Decays

mercredi 25 novembre 2015 09:00 (45 minutes)

Orateur: MISIAK, Mikolaj

Classification de Session: Flavour/Composite plenary

ID de Contribution: **2** Type: **Non spécifié**

Theoretical description of LHCb anomalies and global fits

mercredi 25 novembre 2015 11:00 (45 minutes)

Orateur: Prof. MATIAS, Joaquim (Universitat Autonoma Barcelona)

Classification de Session: Flavour/Composite plenary

ID de Contribution: **3** Type: **Non spécifié**

Partial compositeness, UV completions and ALPs

mercredi 25 novembre 2015 14:00 (45 minutes)

Orateur: Prof. FERRETTI, Gabriele

Classification de Session: Flavour/Composite plenary

ID de Contribution: **4** Type: **Non spécifié**

The Elementary Goldstone Higgs

mercredi 25 novembre 2015 14:45 (30 minutes)

The Higgs as a pseudo Goldstone Boson is not only possible in a composite scenario but also possible in an elementary scenario. In the elementary scenario the theory is both renormalizable and perturbative, which means that the quantum corrections can be calculated using the Coleman-Weinberg potential while permitting to explore the underlying parameter space. By characterising the available parameter space of the extended Higgs sector we discover that the preferred electroweak alignment angle is centred around θ ⊠ 0.02, corresponding to the Higgs chiral symmetry breaking scale f ⊠ 14 TeV.

Orateur: Mme GERTOV, Helene

Classification de Session: Flavour/Composite plenary

ID de Contribution: **5** Type: **Non spécifié**

The Quantum Critical Higgs

mercredi 25 novembre 2015 16:30 (45 minutes)

Orateur: Prof. LEE, Seung J.

Classification de Session: Flavour/Composite plenary

ID de Contribution: **7** Type: **Non spécifié**

Composite flavour

jeudi 26 novembre 2015 09:00 (20 minutes)

Orateur: Dr PAROLINI, Alberto

Classification de Session: CoDyCE 1

ID de Contribution: **8** Type: **Non spécifié**

Constraining composite Higgs models with direct and indirect searches

mercredi 25 novembre 2015 15:30 (30 minutes)

Direct searches for fermion and vector boson resonances, as well as indirect constraints from precision measurements are both important tools to test the predictions of composite Higgs models. A novel numerical technique allows us to take into account many direct and
indirect constraints in a single framework. I will present results from applying our method to a class of four-dimensional pseudo-Nambu-Goldstone boson Higgs models that contain a calculable Higgs potential and protective custodial and flavour symmetries. We find that the models are able to serve as an explanation for the recently observed 2 TeV resonances as well as several B physics anomalies.

Orateur: NIEHOFF, Christoph (Excellence Cluster Universe, TUM)

Classification de Session: Flavour/Composite plenary

ID de Contribution: **10** Type: **Non spécifié**

Interpreting a 2 TeV resonance in WW scattering

Orateur: Prof. ESPRIU, Domenec (ICCUB-Universitat de Barcelona)

ID de Contribution: **11** Type: **Non spécifié**

Interpreting a 2 TeV resonance in WW scattering

jeudi 26 novembre 2015 16:30 (30 minutes)

A diboson excess has been observed —albeit with very limited statistical significance— in WW, WZ and ZZ final states at the LHC experiments using the accumulated 8 TeV data. Assuming that these signals are due to resonances resulting from an extended symmetry breaking sector in the standard model and exact custodial symmetry we determine using unitarization methods the values of the relevant low-energy constants in the corresponding effective Lagrangian. Unitarity arguments also predict the widths of these resonances. We introduce unitarized form factors to allow for a proper treatment of the resonances in Monte Carlo generators and a more precise comparison with experiment.

Orateur: Prof. ESPRIU, Domenec (ICCUB-Universitat de Barcelona)

Classification de Session: CoDyCE 1

ID de Contribution: **12** Type: **Non spécifié**

Discussion

jeudi 26 novembre 2015 17:00 (1 heure)

Classification de Session: CoDyCE 1

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.

Orateur: Prof. HOU, George

Classification de Session: CoDyCE 1

ID de Contribution: **14** Type: **Non spécifié**

The Half-composite Two Higgs Doublet Model and the Relaxion

jeudi 26 novembre 2015 14:00 (30 minutes)

Orateur: ANTIPIN, Oleg (CP3-Origins, University of Southern Denmark)

ID de Contribution: **15** Type: **Non spécifié**

A dangerous irrelevant UV-completion of the composite Higgs

vendredi 27 novembre 2015 10:30 (30 minutes)

Orateur: Dr VECCHI, Luca

Classification de Session: CoDyCE 2

ID de Contribution: **16** Type: **Non spécifié**

Discussion

vendredi 27 novembre 2015 11:00 (1h 30m)

Classification de Session: CoDyCE 2

ID de Contribution: **17** Type: **Non spécifié**

Search strategies for composite top partners at LHC run II

jeudi 26 novembre 2015 11:20 (30 minutes)

Abstract: We discuss several new search strategies for heavy vector-like quark partners at the early stages of the LHC run-II. Run-II will have sensitivity to single- and pair-produced quark partners with masses beyond 1 TeV. Decays of such heavy particles yield highly boosted tops, Higgses, and weak gauge bosons, all of which decay dominantly hadroni- cally. At low boost, hadronic final states suffer from large Standard Model backgrounds, such that leptonic or semi-leptonic decay channels yielded better discovery potential at run-I. At high boost, the SM background of hadronic final states can be substantially sup- pressed when applying jet-substructure techniques. We present several case studies where the identification of hadronically decaying tops, Higgses, and/or electroweak gauge bosons allow to make new search channels competitive at run-II.

based on: arXiv:1507.06568 (and earlier works: 1409.0409, 1410.8131, 1501.07456)

Orateur: Dr FLACKE, Thomas

Classification de Session: CoDyCE 1

ID de Contribution: **18** Type: **Non spécifié**

Discussion

jeudi 26 novembre 2015 11:50 (40 minutes)

Classification de Session: CoDyCE 1

ID de Contribution: **19** Type: **Non spécifié**

Welcome

lundi 23 novembre 2015 09:00 (10 minutes)

Orateur: Dr MAHMOUDI, Nazila (LPC Clermont)

Classification de Session: Flavour 1

ID de Contribution: **20** Type: **Non spécifié**

Constraints from EW penguin and Rare B decays

lundi 23 novembre 2015 09:10 (30 minutes)

Orateur: Dr LANGENBRUCH, Christoph (University of Warwick)

Classification de Session: Flavour 1

ID de Contribution: **21** Type: **Non spécifié**

Lepton flavour violation search and test of lepton flavour universality

lundi 23 novembre 2015 09:40 (30 minutes)

Orateur: DETTORI, Francesco (CERN)

Classification de Session: Flavour 1

ID de Contribution: **22** Type: **Non spécifié**

Theoretical uncertainties in b to s leptonic decays

lundi 23 novembre 2015 10:40 (30 minutes)

Orateur: BHARUCHA, Aoife (CPT, Marseille)

Classification de Session: Flavour 1

ID de Contribution: **23** Type: **Non spécifié**

Cool anomalies in b to s transitions

lundi 23 novembre 2015 11:10 (30 minutes)

Orateur: Dr VIRTO, Javier (University of Siegen)

Classification de Session: Flavour 1

ID de Contribution: **24** Type: **Non spécifié**

Constraints on Wilson coefficients from b to s transitions

lundi 23 novembre 2015 11:40 (30 minutes)

Orateur: NESHATPOUR, Siavash (Institute for Research in Fundamental Sciences (IPM))

Classification de Session: Flavour 1

ID de Contribution: **25** Type: **Non spécifié**

Overview of LFV in B decays, in the context of the LHCb discrepancies in b to s ll decays

lundi 23 novembre 2015 14:00 (30 minutes)

Orateur: GUADAGNOLI, Diego (LAPTh Annecy)

Classification de Session: Flavour 1

ID de Contribution: **26** Type: **Non spécifié**

Explaining the LHC flavour anomalies

lundi 23 novembre 2015 14:30 (30 minutes)

Orateur: D'AMBROSIO, Giancarlo

Classification de Session: Flavour 1

ID de Contribution: **27** Type: **Non spécifié**

Discussion

lundi 23 novembre 2015 15:00 (1 heure)

Orateurs: OWEN, Patrick; KONSTANTINOS, Petridis

Classification de Session: Flavour 1

ID de Contribution: **28** Type: **Non spécifié**

Collaborative work

lundi 23 novembre 2015 16:30 (1 heure)

Classification de Session: Flavour 1

ID de Contribution: **29** Type: **Non spécifié**

Impact on New Physics scenarios from CPViolation measurements

mardi 24 novembre 2015 09:00 (30 minutes)

Orateur: Mme AMHIS, Yasmine (lhcb)

Classification de Session: Flavour 2

ID de Contribution: **30** Type: **Non spécifié**

CP Violation in heavy mesons

mardi 24 novembre 2015 09:30 (30 minutes)

Orateur: Dr JUNG, Martin (TUM IAS / Excellence Cluster Universe)

Classification de Session: Flavour 2

ID de Contribution: **31** Type: **Non spécifié**

Update on |Vxq| determinations

mardi 24 novembre 2015 10:30 (30 minutes)

Orateur: RICCIARDI, Giulia

Classification de Session: Flavour 2

ID de Contribution: **32** Type: **Non spécifié**

Perspective study of charmonium, exotics and baryons with charm and strangeness

mardi 24 novembre 2015 11:00 (30 minutes)

Orateur: Dr BARABANOV, Mikhail (JINR)

Classification de Session: Flavour 2

ID de Contribution: **33** Type: **Non spécifié**

Discussion

mardi 24 novembre 2015 11:30 (30 minutes)

Classification de Session: Flavour 2

ID de Contribution: **34** Type: **Non spécifié**

A Very Light Z' for muon g-2 and Its Implications

mardi 24 novembre 2015 14:00 (30 minutes)

Orateur: Prof. HOU, George W.S. (National Taiwan University)

Classification de Session: Flavour 2

ID de Contribution: **35** Type: **Non spécifié**

BSM effects in semileptonic decays of light quarks

mardi 24 novembre 2015 14:30 (30 minutes)

Orateur: GONZALEZ-ALONSO, Martin (IPN Lyon)

Classification de Session: Flavour 2

ID de Contribution: **36** Type: **Non spécifié**

BSM searches with rare charm decays

mardi 24 novembre 2015 15:00 (30 minutes)

Orateur: DE BOER, Stefan

Classification de Session: Flavour 2

ID de Contribution: **37** Type: **Non spécifié**

Discussion

mardi 24 novembre 2015 15:30 (30 minutes)

Classification de Session: Flavour 2

ID de Contribution: **38** Type: **Non spécifié**

Collaborative work

mardi 24 novembre 2015 16:30 (1 heure)

Classification de Session: Flavour 2

ID de Contribution: **39** Type: **Non spécifié**

Dark Matter from muon anomalies

mercredi 25 novembre 2015 11:45 (45 minutes)

Orateur: Dr DELAUNAY, Cedric (LAPTH)

Classification de Session: Flavour/Composite plenary

ID de Contribution: **40** Type: **Non spécifié**

Theoretical description of LHCb anomalies and global fits

Orateur: Prof. MATIAS, Joaquim (Universitat Autonoma Barcelona)

ID de Contribution: **41** Type: **Non spécifié**

Status of flavour physics and implications for new physics

mercredi 25 novembre 2015 09:45 (45 minutes)

Orateur: HURTH, Tobias

Classification de Session: Flavour/Composite plenary

ID de Contribution: **42** Type: **Non spécifié**

Lattice Four Fermion Interaction in Beyond Standard Model Physics

jeudi 26 novembre 2015 14:45 (30 minutes)

Four fermion interactions occur naturally in several extensions of the Standard Model as a low energy description of a more fundamental theory. In models of dynamical electroweak symmetry breaking, they are used to provide Standard Model fermion masses. When sufficiently strong, these operators can drastically alter the fundamental composite dynamics. For example, they can, turn an infrared conformal model into a (near conformal) chirally broken one, or modify the anomalous dimensions at the infrared fixed point. As a first step we study the lattice version of the Nambu Jona-Lasinio model, a chirally symmetric model with four fermion interactions, with Wilson fermions.

Orateur: Dr RANTAHARJU, Jarno

Classification de Session: CoDyCE 1

ID de Contribution: **43** Type: **Non spécifié**

Discussion on Lattice prespectives

jeudi 26 novembre 2015 15:15 (45 minutes)

Orateurs: Prof. SANNINO, Francesco; Dr RANTAHARJU, Jarno

Classification de Session: CoDyCE 1

ID de Contribution: **44** Type: **Non spécifié**

Discussion on composite DM

vendredi 27 novembre 2015 09:00 (1 heure)

Orateurs: Dr DELAUNAY, Cedric (LAPTH); Dr FRIGERIO, Michele (Laboratoire Charles Coulomb, CNRS)

Classification de Session: CoDyCE 2

ID de Contribution: **45** Type: **Non spécifié**

Discussion

jeudi 26 novembre 2015 09:20 (40 minutes)

Classification de Session: CoDyCE 1

ID de Contribution: **46** Type: **Non spécifié**

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