Questioning Fundamental Physical Principles

Tuesday, May 6, 2014 - Friday, May 9, 2014

CERN

Scientific Program

Tuesday, May 6th

PLENARY SESSION

Wednesday, May 7th

PLENARY SESSION

Thursday, May 8th

PLENARY SESSION

Friday, May 9th

PLENARY SESSION

9:00 - 10:35

N.E. Mavromatos

Welcome

J. Ellis (Latest on

Supersymmetry, Higgs

and LHC Physics)

J. Bernabeu (Discrete
Symmetries T, CP and CPT)

G. Barenboim (CPT and neutrinos)

9:00 - 10:35
K. Olive (Inflation & Supersymmetry)

M. Shaposhnikov (Higgs Inflation at the critical point)

R. Mohapatra (Testing Baryogenesis at the LHC)

9:00 - 10:45
F. Sciarrino

(Boson Sampling via integrated quatum photonics)

C. Hogan (Probing the space-time structure: the holometer experiment at Fermilab)

M. Genovese (Improving interferometers by quantum light: is possible testing quantum gravity on an Optical bench?)

9:00 - 10:40
G. Shore (Questioning causality, unitarity and CPT in curved spacetime QFT)

J Pinfold (The continuing quest for the magnetic monopole)
S. Liberati (Lorentz-breaking effective field theories: phenomenology and constraints)

coffee break

coffee break

coffee break 10:45 - 11:15

coffee break

11:00 - 13:00
A. Bevan (Experimental prospects for T and CPT symmetries tests in the B meson system)

A. Di Domenico

(Testing fundamental physical principles with entangled neutral K mesons)

G. Passaleva (Fundamental Physics results at LHCb and future perspectives)

C. Schwanda (Time-dependent CP violation and stability of the entangled B Bbar state at Belle)

11:00 - 13:00
S. Pascoli (Neutrinos and Leptogenesis in Early Universe)

A. Pilaftsis (Flavour and Thermal Effects on Leptogenesis)

N. Dadhich (Vacuum energy and Lambda: a new perspective)

S. Sarkar (Strings, and CPT Violating Baryon Asymmetry in the Universe)

11:15 - 13:15
E. Widmann (Hyperfine structure of antihydrogen in ASCUSA)

R. Hayano (Physics of ASACUSA: the spectroscopy of antiprotonic helium)

M. Charlton (Antihydrogen physics with ALPHA)

W. Oelert (The ELENA project at CERN)

11:10 - 12:40
C. Laemmerzahl (Tests of fundamental principles)

M. Doser (The AEGIS experiment at the CERN antiproton decelerator)

V. Mitsou (Experimental status of Supersymmetry)

12:40 - 13:00

Closing session: 50 years of CP Violation

Jack Steinberger

Lunch

Lunch

Lunch

Lunch

14:30 - 16:00
E. Kiritsis (On Lorentz violation and the origin of Gravity)

A. De Santis (Test of CPT and Lorentz symmetry with entangled K0's)

P. Moskal (Prospects for studies of discrete symmetries with positronium)

14:00 - 15:10

TH-COLLOQUIUM:

V. Rubakov (The Null Energy Condition, its violation and creation of a universe in the laboratory)

15:10 - 16:40

B. Mukhopadhyay (CPTV leptogenesis)

M. Blasone (flavor neutrino states and quantum entanglement)

A. Bassi (Recent developments in Collapse Models)

14:45 - 16:00

G. Gabrielse (The most precise tests of the Standard Model and its symmetries)

B. Clerbaux (Overview of Physics results at CMS)

coffee break

coffee break 16:40 - 17:05

coffee break

16:30 - 18:00
X. Lu (Physics with entangled neutral D mesons at BES-III and future perspectives)

Y. Shi (Some general results on CP and CPT violating parameters determined from C=-1 and C=+1 entangled states)

T. Durt (The possible existence of a Time Operator and its possible refutal in meson experiments)

17:05 - 18:35

B.C. Hiesmayr (CP violation and quantum entanglement and possible spontaneous collapses of the wave function)

C. Curceanu (X-ray experiments to test collapse models)

J. Marton (VIP-2 at Gran Sasso - an experiment to test the Pauli Principle for electrons)

16:30 - 18:00

H. Lubatti (Overview of Physics results at ATLAS)

Andrzej Kupsc (on dark photon search)

E. Milotti (Photon-photon scattering and the nature of QED vacuum: experimental approaches)