Workshop on Connecting Insights in Fundamental Physics: Standard Model and Beyond

Report of Contributions

https://indico.cern.ch/e/822746
Stueckelberg breaking of Weyl conformal geometry

Sunday, 8 September 2019 09:30 (30 minutes)

Presenter: GHILENCEA, Dumitru (IFIN-HH (RO))
The predictive power of the asymptotic safety paradigm for gravity and matter

Sunday, 8 September 2019 18:30 (20 minutes)

Presenter: HELD, Aaron
Single-field inflation in models with an $R^2$ term

Sunday, 8 September 2019 12:00 (30 minutes)

Presenter: KARAM, Alexandros
Necessity and Insufficiency of Scale Invariance for solving Cosmological Constant Problem

Sunday, 8 September 2019 10:30 (30 minutes)

Presenter: KUGO, Taichiro
Planck scale from broken local conformal invariance in Weyl geometry

Sunday, 8 September 2019 10:00 (30 minutes)

Presenter: ODA, Ichiro
Quantum scale invariance, hierarchy generation and inflation

Sunday, 8 September 2019 09:00 (30 minutes)

Presenter: ROSS, Graham
Scale symmetry, the Higgs and the Cosmos

Sunday, 8 September 2019 12:30 (30 minutes)

Presenter: RUBIO, Javier (EPFL)
Contribution ID: 8  

Type: not specified

**tba**

**Presenter:** TAMVAKIS, Kyriakos (University of Ioannina (GR))
Beyond positivity bounds on Higgs-dilaton model

Sunday, 8 September 2019 13:00 (30 minutes)

Presenter: TOKAREVA, Anna
Weyl-invariant vector-tensor theory for the cosmological constant

Presenter: VIKMAN, Alexander (Acad. of Sciences of the Czech Rep. (CZ))
Gauge hierarchy problem and scalegenesis

*Sunday, 8 September 2019 16:30 (30 minutes)*

**Presenter:** YAMADA, Masatoshi
Dark matter from neutrino observations

Monday, 9 September 2019 09:00 (30 minutes)

Presenter:  CHOI, Ki-Young (Chonnam National University)
Challenges in supersymmetric cosmology

Monday, 9 September 2019 10:00 (30 minutes)

Presenter: ANTONIADIS, Ignatios (UPMC)
Event selection and differential cross section measurements in H→4l decays

Monday, 2 September 2019 18:40 (20 minutes)

Presenter:  BELLOS, Panagiotis (National and Kapodistrian University of Athens (GR))
Exploring New Physics in B to π K Decays

Tuesday, 3 September 2019 18:30 (20 minutes)

**Presenter:** MALAMI, Eleftheria
Bs to Ds+- K+- decays: Can they reveal New Physics?

Presenter: MALAMI, Eleftheria
Selected topics on flavour physics

*Tuesday, 3 September 2019 11:30 (1 hour)*

**Presenter:** BRANCO, Gustavo (Instituto Superior Tecnico)
Rare decays at LHCb

*Tuesday, 3 September 2019 09:30 (45 minutes)*

**Presenter:** PEPE-ALTARELLI, Monica (CERN)
CP violation and spectroscopy at LHCb

Tuesday, 3 September 2019 10:15 (45 minutes)

Presenter: HARNEW, Neville (University of Oxford (GB))
Contribution ID: 20

**B anomalies linked to the problem of the origin of Yukawa couplings.**

*Tuesday, 3 September 2019 09:00 (30 minutes)*

**Presenter:** Prof. KING, Stephen F (University of Southampton)
General Flavour Conserving 2HDM

Friday, 6 September 2019 16:30 (30 minutes)

Presenter: BOTELLA OLCINA, Francisco Jose (Univ. of Valencia and CSIC (ES))
Probing New Physics with Leptonic Rare B Decays

Tuesday, 3 September 2019 13:00 (30 minutes)

Presenter: FLEISCHER, Robert (Vrije Universiteit Amsterdam)
Bonneau identities in the model gauge bosons, fermions and scalars

Monday, 9 September 2019 17:00 (30 minutes)

Presenter: ILAKOVAC, Amon (Univ. of Zagreb)
Measurement of the weak mixing phase $\phi_s$ through time-dependent CP violation in $B_s^0 \rightarrow J/\psi \phi$ decay in ATLAS

*Presenter:* SIMSEK, Sinem (Istanbul Bilgi University(TR))
Heavy-quark form factors

Tuesday, 3 September 2019 12:30 (30 minutes)

Presenter: MARQUARD, Peter (DESY)
Neutrino physics - a review

Wednesday, 4 September 2019 10:00 (1 hour)

Presenter: KING, Stephen F (University of Southampton)
Inflation meets neutrinos

Wednesday, 4 September 2019 09:00 (30 minutes)

Presenter:  BARENBOIM, Gabriela (University of Valencia & IFIC (UV-CSIC))
Dirac neutrinos in the 2HDM with abelian symmetries

Monday, 9 September 2019 13:00 (30 minutes)

Presenter: JOAQUIM, Filipe
CMS results

Friday, 6 September 2019 11:30 (1 hour)

Presenter: DE ROECK, Albert (CERN)
Highlights from ATLAS

Monday, 2 September 2019 09:00 (1 hour)

Presenter:  FAYARD, Louis (Centre National de la Recherche Scientifique (FR))
Dark Matter and the Higgs

Friday, 6 September 2019 10:30 (30 minutes)

Presenter: DJOUADI, Abdelhak (Unité Reseaux du CNRS (FR))
QCD theory review

Sunday, 1 September 2019 16:00 (1 hour)

Presenter: KUTAK, Krzysztof (Instytut Fizyki Jadrowej Polskiej Akademii Nauk)
ALICE results

*Monday, 2 September 2019 16:30 (1 hour)*

**Presenter:** DE, Sudipan (National Institute of Science Education and Research (IN))
Observation of H to bb decays and VH production with the ATLAS detector

*Monday, 2 September 2019 18:20 (20 minutes)*

**Presenter:** CHEN, Cheng (University of Science and Technology of China (CN))
Treatment of $\gamma_5$ in Dimensionally-Regularized Chiral Yang-Mills Theory with Scalar Fields

Monday, 9 September 2019 17:30 (30 minutes)

Presenter: BELUSCA-MAITO, Hermes
Contribution ID: 36
Type: not specified

**tba**

**Presenter:** MADOR-BOZINOVIC, Marija
Effective Description of Critical QCD

Sunday, 1 September 2019 17:00 (30 minutes)

Presenter: ANTONIOU, Nikos
Protecting the stability of the EW vacuum

Presenter: BRANCHINA, Vincenzo (Universita e INFN (IT))
Electroweak Precision at Current and Future Colliders

Monday, 2 September 2019 10:00 (1 hour)

Presenters: WULZER, Andrea (CERN and EPFL); TBD
Particles and the Universe

Tuesday, 10 September 2019 10:00 (1 hour)

Presenter: LAZARIDES, George
Coffee break
Evasive maneuvers for a sequential fourth generation to circumvent the Higgs data

*Monday, 2 September 2019 16:00 (30 minutes)*

**Presenter:** DAS, Dipankar (Lund University)
Testing Pseudo-Goldstone Dark Matter

Friday, 6 September 2019 12:30 (30 minutes)

Presenter: GRZADKOWSKI, Bohdan (University of Warsaw)
One-loop contributions to dark matter-nucleon scattering in scalar and vector DM models

Friday, 6 September 2019 13:00 (30 minutes)

**Presenter:** SANTOS, Rui (ISEL)
CP-violation in extended Higgs sectors

Saturday, 7 September 2019 12:30 (30 minutes)

Presenter: KEUS, Venus (University of Helsinki)
On the mass of the sexaquark

Tuesday, 3 September 2019 17:00 (30 minutes)

Presenter: BUCELLA, Franco (Unknown)
Contribution ID: 47

Type: not specified

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Friday, 6 September 2019 09:00 (1 hour)

Presenter: TSESMELIS, Emmanuel (CERN)
ILC and CLIC

*Wednesday, 4 September 2019 16:00 (1 hour)*

**Presenter:** ZARNECKI, Aleksander (University of Warsaw (PL))
Inert Doublet Model signatures at Future e+e- Colliders

*Friday, 6 September 2019 16:00 (30 minutes)*

**Presenter:** ZARNECKI, Aleksander (University of Warsaw (PL))
Long baseline neutrino experiments and the European Spallation Source neutrino Super Beam

Wednesday, 4 September 2019 11:30 (30 minutes)

Presenter: Dr DRACOS, Marcos (Centre National de la Recherche Scientifique (FR))
Cosmological constraints on neutrino physics

Wednesday, 4 September 2019 09:30 (30 minutes)

Presenter: GERBINO, Martina
Neutrino oscillations in Unruh radiation: the proton’s testimony

Wednesday, 4 September 2019 12:00 (30 minutes)

Presenter: LUCIANO, Gaetano
The Gamma Factory project for CERN

*Monday, 2 September 2019 13:00 (30 minutes)*

**Presenter:** KRASNY, Mieczyslaw (Universite Sorbonne Nouvelle Paris III (FR))
Status of our dark matter pearl model fitting extremely well the 3.5 keV X-ray radiation intensity and frequency as good as dimensiona

Friday, 6 September 2019 17:00 (30 minutes)

Presenter: NIELSEN, Holger (University of Copenhagen-Unknown-Unknown)
Leptonic Scalars versus Scalar Leptons

*Monday, 9 September 2019 12:00 (30 minutes)*

**Presenter:** MA, Ernest (University of California, Riverside)
Minimal Consistent Fermion Dark Matter

Monday, 9 September 2019 18:30 (20 minutes)

Presenter: LOCKE, Daniel (University of Southampton)
New Features in FeynArts & Friends, and how they
got used in FeynHiggs

Saturday, 7 September 2019 09:00 (30 minutes)

Presenter: HAHN, Thomas (MPI f. Physik)
Primordial black holes as a possible candidate for dark matter

Friday, 6 September 2019 10:00 (30 minutes)

Presenter: RAIDAL, Martti (National Institute of Chemical Physics and Biophysics (EE))
BSM SU(2)\_L+R vector resonance triplet

**Presenter:** GINTNER, Mikulas (University of Zilina (SK))
Updates in Reduction of Couplings in Finite Unified Theories

Saturday, 7 September 2019 19:00 (20 minutes)

Presenter: PATELLIS, Grigoris (CERN)
Searching for long-lived neutralinos

Saturday, 7 September 2019 10:00 (30 minutes)

Presenter: DREINER, Herbi (Bonn University)
Effective Field Theory insight to Physics Beyond the Standard Model

Saturday, 7 September 2019 17:00 (30 minutes)

Presenter: DEDES, Athanasios (University of Ioannina)
Axions and clockwork in heterotic M-theory

Monday, 9 September 2019 11:30 (30 minutes)

Presenter: OLECHOWSKI, Marek
A fresh look at the gauge coupling unification and proton decay

Saturday, 7 September 2019 16:30 (30 minutes)

Presenter: SAKURAI, Kazuki (University of Warsaw)
Forbidden Freeze-In

Wednesday, 4 September 2019 17:30 (30 minutes)

Presenter:  KARAMITROS, Dimitrios (NCBJ)
Continuum Naturalness

Sunday, 8 September 2019 16:00 (30 minutes)

Presenter: LEE, Seung J. (Korea University)
Quantum Anomalies in the Running Vacuum
Universe and Matter-Antimatter Asymmetry

*Monday, 2 September 2019 12:00 (30 minutes)*

**Presenter:** MAVROMATOS, Nikolaos (University of London)
MoEDAL physics results and future plans

*Monday, 2 September 2019 12:30 (30 minutes)*

**Presenter:** Dr Mitsou, Vasiliki (Univ. of Valencia and CSIC (ES))
Perturbative unitarity bounds for effective composite models

Saturday, 7 September 2019 10:30 (30 minutes)

Presenter: BIONDINI, Simone (Università e INFN (IT))
Spectrum of anomalous dimensions in hypercubic theories

Monday, 9 September 2019 18:50 (20 minutes)

Presenter: BERSINI, Jahmall
Search for Heavy Neutral Lepton in the future DUNE Near Detector.

Wednesday, 4 September 2019 18:30 (20 minutes)

Presenter:  REJEB SFAR, Haifa (University of Antwerp (BE))
Forward-backward asymmetry in the gauge-Higgs unification at the International Linear Collider

*Monday, 9 September 2019 16:30 (30 minutes)*

**Presenter:** SHUICHIRO, Funatsu
Generalized para-Kahler geometry and twisted supersymmetry

Presenter: SVOBODA, David
Contribution ID: 74
Type: not specified

Theoretical and observational confrontation of cosmology and gravity, and the new era of multi-messenger astronomy

Tuesday, 10 September 2019 12:00 (30 minutes)

Presenter: SARIDAKIS, Emmanuel (University of Athens)
Black Holes and Wormholes in Einstein-scalar-Gauss-Bonnet Theories

Saturday, 7 September 2019 13:00 (30 minutes)

Presenter:  KANTI, Panagiota (University of Ioannina)
Inflation, (P)reheating and Neutrino Anomalies

Production of Sterile Neutrinos with Secret Interactions

Monday, 9 September 2019 19:10 (20 minutes)

Presenter: GHOSHAL, Anish
A microscopic model for inflation from supersymmetry breaking

Monday, 9 September 2019 12:30 (30 minutes)

Presenter: CHATRABHUTI, Auttakit
Higgs Potential with S3 symmetry

Saturday, 7 September 2019 19:20 (20 minutes)

Presenter: PEREZ MARTINEZ, Adriana
The Steinman Cluster Bootstrap for N=4 Super Yang-Mills Amplitudes

Sunday, 1 September 2019 17:30 (30 minutes)

Presenter: PAPATHANASIOU, Georgios (Unite Reseaux du CNRS (FR))
Local singular structure of gauge theory amplitudes

Wednesday, 4 September 2019 17:00 (30 minutes)

Presenter: ANASTASIOU, Charalampos
Towards large entropic conformal window of gravity

Presenter: MAZUMDAR, Anupam (Groningen University)
Gauge hierarchy problem and SUSY: Think again

Monday, 9 September 2019 16:00 (30 minutes)

Presenter: KIM, Jihn E. (Kyung Hee University)
Contribution ID: 83

Type: not specified

**tba**

**Presenter:** ODA, Kin-ya (Osaka University)
Contribution ID: 84  Type: not specified

**tba**

**Presenter:** ROMANINO, Andrea
String loop corrections and de Sitter vacua

Tuesday, 10 September 2019 13:00 (30 minutes)

Presenter:  LEONTARIS, Georgios (University of Ioannina (GR))
Contribution ID: 86
Type: not specified

tba

Tuesday, 3 September 2019 17:30 (30 minutes)

Presenter: PARADISI, Paride (University of Padova and INFN)
Gravitational Waves and DM

Sunday, 8 September 2019 17:30 (30 minutes)

Presenter: JUNG, Sunghoon (Seoul National University)
Contribution ID: 88  

**Leptogenesis**  

*Wednesday, 4 September 2019 13:00 (30 minutes)*

**Presenter:** KANG, Sin Kyu (Seoul-Tech)
tba

**Presenter:** MONDRAGON, Myriam (Universidad Nacional Autonoma de Mexico UNAM)
Testing GUT unification and LFV at the LHC

Presenter: LOLA, Magda
Precision physics applications for 2->2 and 2->3 NNLO LHC calculations

Saturday, 7 September 2019 09:30 (30 minutes)

Presenter: MITOV, Alexander (University of Cambridge (GB))
Measurement of inclusive 4l (llvv) + 2-jet cross section and search for EWK component in 13 TeV proton-proton collisions with the ATLAS detector

Monday, 2 September 2019 17:30 (20 minutes)

Presenter: ZHU, Heling (University of Science and Technology of China (CN); Brookhaven National Laboratory (US))
Beyond the Standard Model

Saturday, 7 September 2019 11:30 (1 hour)

Presenter: ROSS, Graham Garland (University of Oxford (GB))
Dark Matter as Ultralight Axion-Like particle

Monday, 9 September 2019 09:30 (30 minutes)

**Presenter:**  CORIANO, Claudio (Unknown)
Towards large entropic conformal window of gravity

Saturday, 7 September 2019 17:30 (30 minutes)

Presenter: MAZUMDAR, Anupam
Contribution ID: 96

Type: not specified

Presenter: KALINOWSKI, Jan
On the viable two leptoquark model for the B-physics anomalies

Saturday, 7 September 2019 16:00 (30 minutes)

Presenter: DORSNER, Ilja (University of Split Faculty of Science (HR))
Welcome
Can measurements of 2HDM parameters provide hints for high scale supersymmetry?

Friday, 6 September 2019 17:30 (30 minutes)

Presenter: SAHA, Ipsita (INFN Rome1)
Core group meeting
Determination of the Number of Neutrinos at LEP
(30 years later)

Wednesday, 4 September 2019 12:30 (30 minutes)

Presenter: PEPE-ALTARELLI, Monica (CERN)
Exotics and BSM in ATLAS and CMS (Non DM searches)

Friday, 6 September 2019 19:00 (30 minutes)

Presenter: YUAN, Li (Beihang University (CN))
Bileptons at the LHC

Tuesday, 10 September 2019 12:30 (30 minutes)

Presenter: FRAMPTON, Paul (University of Salento)
Search for a pair of pseudoscalars in decays of the Higgs boson in CMS

Friday, 6 September 2019 19:30 (20 minutes)

Presenter:  CONSUEGRA RODRIGUEZ, Sandra (Deutsches Elektronen-Synchrotron (DE))
Stability of electroweak vacuum in a scale invariant extension of the SM

Sunday, 8 September 2019 11:30 (30 minutes)

Presenter: LALAK, Zygmunt
DM in ATLAS and CMS

Sunday, 8 September 2019 17:00 (30 minutes)

Presenter: BARBERIO, Elisabetta (University of Melbourne (AU))
Higgs studies in ATLAS and CMS

Monday, 2 September 2019 11:30 (30 minutes)

Presenter: LIU, Kun (Tsung-Dao Lee Institute & Shanghai Jiao Tong University)
The Lifetime Frontier: Search for displaced hadronic jets in proton-proton collisions at $\sqrt{s}=13$ TeV with the ATLAS detector

Sunday, 8 September 2019 18:50 (20 minutes)

**Presenter:** KVAM, Audrey Katherine (University of Washington (US))
UV Completion in the Worldline

Monday, 9 September 2019 10:30 (30 minutes)

Presenter: ABEL, Steven Adam (University of Durham (GB))
Top Physics in ATLAS and CMS

Tuesday, 3 September 2019 16:30 (30 minutes)

Presenter: WANG, Jin (Chinese Academy of Sciences (CN))
Stochastic gravitational waves and the nature of the dark matter

Tuesday, 10 September 2019 11:30 (30 minutes)

Presenter: DALIANIS, Yiannis (NTU Athens)
Where we are on B-physics discrepancies

Tuesday, 3 September 2019 16:00 (30 minutes)

Presenter: GUADAGNOLI, Diego (LAPTh Annecy)
SUSY searches in ATLAS and CMS

Friday, 6 September 2019 18:30 (30 minutes)

Presenter: MITSOU, Vasiliki (Univ. of Valencia and CSIC (ES))
Quartic Coupling Unification in multi-Higgs Doublet Models

Saturday, 7 September 2019 18:30 (30 minutes)

Presenter: PILAFTSIS, Apostolos (University of Manchester (GB))