PROCEEDINGS OF SCIENCE

Foreword to the Proceedings of the Corfu Summer Institute "School and Workshops on Elementary Particle Physics and Gravity" (CORFU2017)

Dedicated to the memory of Maria Krawczyk and Pierre Binetruy

1. Foreword

These are the Proceedings of the scientific activities of CORFU2017, the 17th Hellenic School and Workshops on Elementary Particle Physics and Gravity, which took place from September 2nd to 28th, 2017. The Schools and Workshops were hosted by the European Institute for Sciences and their Applications (EISA) in the conference center of the ex-Royal Palace garden of Mon Repos in Corfu, Greece. The scientific activities consisted of a series of six events, *the Workshop on the Standard Model and Beyond* *the ΛCDM and Beyond: Cosmology Tools in Theory and in Practice - A CANTATA Cost-Action Summer School*, *the Workshop on Particle Physics and Cosmology TOOLS*, *the Training School "Quantum Spacetime and Physics Models"*, *the Probing Strong-Field Gravity in the Advanced GW Detector Era* and *the Workshop on Testing Fundamental Physics Principles* and a rich set of outreach activities (TV and radio interviews, Master Classes, series of lectures to High School teachers and talks for the public).

We refer to the website:

http://www.physics.ntua.gr/corfu2017

for the various organizational and practical details.

These proceedings are dedicated to our colleagues Maria Krawczyk and Pierre Binetruy who passed away on 24th of May and 1st of April 2017 correspondingly. Both were distinguished theoretical physicists, although working in different areas of the field and great friends of the Corfu Scientific activities to the success of which contributed in a fundamental way. We express our deepest sympathy to the members of their family. Our friends and colleagues Jan Kalinowski and Stavros Katsanevas who knew very well Maria and Pierre wrote few more words about our friends who passed away and can be found below before the scientific contributions. Their memory will stay forever! with us.

The Corfu Summer Institute has a very long, interesting and successful history. The Corfu Meetings started in 1982 as a Summer School on EPP mostly for Greek graduate students and since then it has developed into a leading international Summer Institute in the field of elementary particle physics (covering both experimental and theoretical advances) and more recently of

gravity. In addition, it launched a very rich outreach program to teachers and school students that has been widely appreciated by the local society and scientific community over the years.

The structure of the “Summer Institute on EPP and Gravity 2017” was based on the general format developed and established and tested in all previous Corfu Meetings. This year was hosted again by the European Institute for Science and their Applications (EISA). The new Institute aims to serve as permanent extension of the Corfu Summer Institutes with the additional target to attract first class scientists that can stay for a long period and produce locally a significant research output. The scientific activities of CORFU2017 were held in the conference hall of the of the garden of Mon Repos in the town of Corfu, which is the permanent basis of EISA.

Moreover we had a very exciting development. An application of the Corfu Municipality to a related call of the central Government concerning the renovation of three old buildings in the garden of Mon Repos was approved! This means that soon the dream of having buildings in Mon Repos which will host the EISA's scientific activities participants by providing them office space and the rest infrastructure will be realised!

The first event, ***Workshop on the Standard Model and Beyond*** (took place from September 2nd to12th, 2017). It was coorganized and supported by the: COST Action CA15108, Connecting insights in fundamental physics, EISA, the ITN’s: HiggsTools, Invisibles, the ERC grants: LHCtheory - Theoretical Predictions and Analyses of LHC Physics: "Advancing the Precision Frontier", LHCTHEORY, HICCUP, and the Institutes: Max Planck Institute for Physics, CERN, SAMPS - National Technical University of Athens, Deutsches Elektronen-Synchrotron (DESY), IPPP Durham, LAPP, IFT Madrid, Sommerfeld Center for Theoretical Physics, University of Uppsala, SISSA, LPTENS, ICTP, LAPTH, University of Warsaw, University of Granada, CFTP/IST, University of Lisboa, IFIC Valencia, Oxford University, Universidad Autonoma de Madrid, Scuola Normale Superiore, Pisa, NCSR "Demokritos", NIPNE Bucharest, T.U. München.

The Scientific Organizers were:

F. del Aguila (Granada U.)
J. A. Aguilar Saavedra (Granada U.)
I. Antoniadis (Paris, LPTHE & U. Bern, AEC)
R. Barbieri (SNS, Pisa)
M. B. Gavela (Autonoma U., Madrid)
D. Ghilencea (NIPNE Bucharest)
N. Glover (Durham U., IPPP)
W. Hollik (MPI, Munich)
J. Kalinowski (Warsaw U.)

G. Koutsoumbas (NTUA)
C. Papadopoulos (NCSR Demokritos)
R. Pittau (U. Granada)
M. N. Rebelo (CFTP/IST, U. Lisboa)
A. Ringwald (DESY)
G. Rodrigo (IFIC Valencia)
S. Sarkar (Oxford U.)
E. Tsesmelis (CERN & Oxford U.)
A. Weiler (T.U. München)
G. Zanderighi (CERN & Oxford U.)

The second event, ***ΛCDM and Beyond: Cosmology Tools in Theory and in Practice A CANTATA Cost-Action Summer School*** (took place from September 4 - 15, 2017). It was coorganized and supported by the COST Action CA 15117 and EISA.

The Scientific Organizers were:

M. Bruni (U. Portsmouth)
A. Silvestri (U. Leiden)
D.F. Mota (U. Oslo)
P.M. Moruno (Complutense U. Madrid)
V. Salzano (U. Szczecin)
R. Lazkoz (U of the Basque Country)
C. Boehmer (U. College London)
S. Capozziello (U. Naples "Federico II")
M. De Laurentis (Goethe U. & Tomsk State Pedagogical U.)
J.P. Mimoso (U. Lisbon)
P.V. Moniz (U. Beira Interior)
V. Pettorino (CEA Paris Saclay)

The third event, ***Workshop on Particle Physics and Cosmology TOOLS***, (took place from September 9th to 14th, 2017). It was coorganized and supported by the: LAPTh Annecy, EISA, LPTHE Paris, IPPP Durham, CERN.

The Scientific Organizers were:

F. Boudjema (LAPTh, Annecy)
B. Fuks (LPTHE, Paris)

E. Re (LAPTh, Annecy & CERN)
P. Richardson (IPPP Durham & CERN)

The fourth event, ***Training School "Quantum Spacetime and Physics Models"***, (took place from September 16th to 23rd, 2017). It was coorganized and supported by the: COST Action MP1405, Quantum structure of spacetime (QSPACE), EISA and the Institutes: Università del Piemonte Orientale, INFN-Napoli, Università di Napoli Federico II, NCSR Demokritos, SAMPS - National Technical University of Athens.

The Scientific Organizers were:

P. Aschieri (U. Piemonte Orientale)
F. Lizzi (INFN, Napoli & U. Napoli Federico II)
P. Vitale (INFN, Napoli & U. Napoli Federico II)
G. Savvidy (NCSR Demokritos)
G. Zoupanos (NTU Athens)

The fifth event, ***Probing Strong-Field Gravity in the Advanced GW Detector Era"***, (took place from September 18th to 23rd, 2017). It was coorganized and supported by the: EISA, DAMTP Cambridge, Nikhef Amsterdam, INFN Pisa, INFN-Torino, ICTS-TIFR Bangalore, NTU Athens.

The Scientific Organizers were:

M. Agathos (DAMTP, Cambridge)
W. Del Pozzo (Pisa)
A. Ghosh (Nikhef)
N. Johnson-McDaniel (ICTS, India)
A. Nagar (INFN, Torino)

The sixth event, ***Workshop on Testing Fundamental Physics Principles"***, (took place from September 22nd to 28th, 2017). It was coorganized and supported by the: EISA, COST Action MP1405, Quantum structure of spacetime (QSPACE) and the Institutes: INFN Trieste, L.N. Frascati, University of Trieste, INFN Napoli, University of Napoli Federico II, King's College London, NCSR Demokritos, NTU Athens, Hellenic Society for the Study of High Energy Physics.

The Scientific Organizers were:

A. Bassi (INFN, Trieste & U. Trieste)
C. Curceanu (INFN, L.N. Frascati)
F. Lizzi (INFN, Napoli & U. Napoli Federico II)
N. Mavromatos (King's College London)
G. Savvidy (NCSR Demokritos)
G. Zoupanos (NTU Athens)

The outcome was indeed very impressive, given that the six sessions gathered 373 participants. More impressive is the number of young scientists that were attracted: 144 in total. Another impressive fact is the number of fellowships distributed to the young participants: 110 in total! covering their full local expenses.

In short internationally leading scientists have been gathered to participate to the School and Workshops, giving lectures and creating a unique and stimulating scientific environment for the senior as well as the young scientists.

More specifically, the ***Workshop on the Standard Model and Beyond*** was dedicated to Maria Krawczyk. It has attracted 124 senior and young scientists in total; 92 of them have presented their current research project as workshop speakers.

The workshop speakers were the following:

A. Ali (DESY), P. Anastasopoulos (TU Wien), I. Antoniadis (LPTHE Paris & AEC Bern), N. Antoniou (Athens U.), P.-H. Beauchemin (Tufts U.), K. Benakli (CNRS), J. Bernabeu (Universidad de Valencia), F. Botella (Valencia U), G. Branco (TU Lisbon), G. Bruno (U. & INFN, Bari), F. Bucella (Naples U.), K. Choi (KAIST), E. J. Chun (Korea Institute for Advanced Study), Y. Coadou (CPPM, Aix-Marseille Université, CNRS/IN2P3 (FR),), M. Chala (IFIC), C. Charmousis (Paris-Sud University), A.Crivellin (PSI), A. Dedes (University of Ioannina), P. De Forcrand De Coiselet (Eidgenoessische Technische Hochschule Zuerich), A. De Maria (Georg-August-U. Goettingen), I. de Medeiros Varzielas (University of Lisbon), A. De Roeck (CERN), A. De Rujula (CSIC), F. Del Aguila (Granada U.), F. Diakonos (Athens U.), G. Degrassi (U degli Studi Roma Tre), A. Di Domenico (Sapienza U. & INFN, Roma I), P. Dimopoulos (Centro Fermi & U. di Roma "Tor Vergata"), C. Diez Pardos (DESY), E. Elsen (CERN), C. Galloni (U. Zuerich), M. Gazdzicki (Johann-Wolfgang-Goethe Univ.), D. Giataganas (NCTS), D. Ghilencea (IFIN - HH), M. Giulia Ratti (U. of Milan and INFN), B .Grzadkowski (Warsaw U.), T. Hahn (MPI f. Physik), N. Harnew (Oxford U.), L. Iconomidou-Fayard (U. de Paris-Sud 11), N. Irges (NTUA), J. Kalinowski (Warsaw U.), J. Kersten (University of Bergen), S. King (U Southampton), O. Kivernyk (Centre National de la Recherche Scientifique), P. Ko (Korea Inst. for Advanced Study), G. Landsberg (Brown University), Z. Lalak (Warsaw U.), G. Lazarides (AUTH), O.

Lebedev (University of Helsinki), H.M. Lee (CAU - Chung-Ang University), G. Leontaris (Ioannina U.), C. S. Lim, M. Lola (University of PatrasA. Lymperis (Patras U.), N. Mahmoudi (CERN), J. Mamuzic (IFIC Valencia), T. Matsui (KIAS), N. Mavromatos (University of London), K. Meissner (Institute of Experimental Physics), V. Mitsou (Univ. of Valencia and CSIC), M. Mondragon (U. Mexico), A. Morselli (INFN), M. Nemevsek (Institute Jozef Stefan), H. Nielsen (NBI), K. Nishiwaki (Korea Institute for Advanced Study), A. Romanino (SISSA), K. Ocalan (Middle East Technical U.), O. D. Ogreid (Bergen College University), M. Olechowski (Warsaw U.), P. Osland (U. of Bergen), C.Pallis (University of Cyprus), M. Pepe – Altarelli (CERN), A.Pilaftsis (Manchester U), S. Pigazzini (U. & INFN, Milano-Bicocca (IT)), A. Pomarol (U. de Barcelona), M. Praszalowicz (Jagiellonian University), M. Quiros (ICREA), M. Raidal (National Inst. of Chemical Physics and Biophysics), V. Rekovic (University of Wisconsin-Madison), P. Roloff (CERN), G. Ross (U. of Oxford), F. Sannino (Syddansk U.), K. R. Schmidt-Hoberg (DESY), A. Studenikin (Moscow State University), L. Velasco-Sevilla (University of Bergen), O. Vives (Univ. of Valencia & CSIC), C. Wang (Academia Sinica /Nanjing U.), R. Watanabe (University of Montreal), P. Wells (CERN), G. Zanderighi (CERN), R. Zwicky (Edinburgh U.).

The full programme of the Workshop was the following:

Saturday 2nd of September

10:00 – 14.00	**REGISTRATIONS**	
16:00 - 16:30	**Opening**	
16:30-17:00	**A. Morselli** (INFN)	Indirect dark-matter searches with gamma-rays experiments: status and future plans from 300 KeV to 100 TeV
17:00-17:30	**V. Mitsou** (Univ. of Valencia and CSIC)	MoEDAL experiment
17:30-18:00	**N. Mavromatos** (U. London)	Axion, Majorana Neutrino Masses and implications for the dark sector of the Universe
18:00 - 18:30	Coffee break	
18:30 - 19:00	**P. Dimopoulos** (Centro Fermi & U. di Roma "Tor Vergata")	Lattice check of dynamical fermion mass generation
19:00-19:30	**C. S. Lim**	Higgs boson decays and hierarchical quark masses in gauge-Higgs unification

Sunday 3rd of September

9:00 – 9:30	**N. Antoniou** (Athens U.)	Critical fluctuations in QCD matter

9:30 - 10:00	**F. Diakonos** (Athens U.)	Finite-size scaling and intermittency studies in crucial measurements for the QCD critical point
10:00 – 10:30	**P. De Forcrand De Coiselet** (Eidgenoessische Technische Hochschule Zuerich)	The QCD phase diagram from the lattice
10:30 – 11:00	**F. Bucella** (Naples U.)	Low Q^2 boundary conditions for DGLAP equations fixed by quantum statistical mechanics
11:00 - 11:30	Coffee break	
11:30 - 12:00	**J. Kalinowski** (Warsaw U.)	**Maria Krawczyk memorial**
12:00 - 12:30	**G. Branco** (TU Lisbon)	Generating light quark masses and mixing through vector-like quarks
12:30 – 13:00	**L. Velasco-Sevilla** (University of Bergen)	How Higgs physics can uncover the nature of flavour
13:00 – 13:30	**P.-H. Beauchemin** (Tufts U.)	Recent Standard Model results in ATLAS and CMS
13:30 - 16:00	Lunch break	
16:00 - 17:00	**A. De Rujula** (CSIC)	History and status of QCD
17:00 - 17:30	**A. Di Domenico** (Sapienza U. & INFN, Roma I)	CPT, entanglement and neutral kaons
17:30 – 18:00	**F. Sannino** (Syddansk U.)	Asymptotically Safe Standard Model: The Path Toward a Fundamental Theory of Nature
18:00 - 18:30	Coffee break	
18:30 - 19:00	**G. Lazarides** (AUTH)	Sterile Neutrinos, Dark Matter, and Resonances in \p
19:00 – 19:30	**A. Dedes** (University of Ioannina)	Feynman Rules for the SM Effective Field Theory in R_xi
19:15-19:30	**C. Wang** (Academia Sinica /Nanjing U.)	Search for ttH production in the 3 lepton final state at ATLAS
19:30 – 19:45	**M. Giulia Ratti** (U. of Milan and INFN)	Search for dark matter in the jet+missing transverse momentum topology with ATLAS

Monday 4th of September

9:00 – 10:00	**A. De Roeck** (CERN)	CMS overview talk
10:00 – 10:30	**C. Diez Pardos** (DESY)	Top physics in ATLAS and CMS
10:30 – 11:00	**Y. Coadou** (CPPM, Aix-Marseille U, CNRS/IN2P3)	Higgs (SM and BSM) in ATLAS and CMS
11:00 - 11:30	Coffee break	

11:30 - 12:00	**Z. Lalak** (Warsaw U.)	Standard Model effective action - domain walls and vacuum stability.
12:00 - 12:30	**A. Romanino** (SISSA)	General considerations on lepton mass matrices
12:30 – 13:00	**M. Praszalowicz** (Jagiellonian University)	On a possibility of baryonic exotica
13:00 – 13:30	**M. Gazdzicki** (Johann-Wolfgang-Goethe Univ.)	News on Onset of Deconfinement and Critical Point of Strongly Interaction Mattter from NA61/SHINE
13:30 - 16:00	Lunch break	
16:00 - 17:00	**G. Bruno** (U. & INFN, Bari)	ALICE overview talk
17:00 - 17:30	**A. Ali** (DESY)	Multiquark Hadrons - Current Status and Future Directions
17:30 – 18:00	**L. Iconomidou-Fayard** (U. de Paris-Sud 11)	Physics Prospects for HL-LHC with the ATLAS detector
18:00 - 18:30	Coffee break	
18:30 - 18:45	**O. Kivernyk** (CNRS)	Measurement of the W-boson mass at the ATLAS experiment
18:45 - 19:00	**C. Galloni** (U. Zuerich)	Search for new resonances decaying into two Higgs bosons or a W/Z and a Higgs boson at CMS
19:00 – 19:20	**D. Giataganas** (NCTS)	Confinement/Deconfinement Phase Transitions in Strongly Coupled Anisotropic Theories

Tuesday 5th of September

9:00 – 09:45	**M. Pepe – Altarelli** (CERN)	Rare decays and searches for new physics at LHCb
9:45 – 10:30	**N. Harnew** (Oxford U.)	Measurements CP-violation and the unitarity triangle with LHCb
10:30 – 11:00	**G. Degrassi** (U degli Studi Roma Tre)	Probing the Higgs trilinear selff coupling via single Higgs production and precision observable
11:00 - 11:30	Coffee break	
11:30 - 12:00	A. **Pilaftsis** (Manchester U)	On the Cosmological Frame Problem
12:00 - 12:30	**F. Del Aguila** (Granada U.)	Flavor violation in Higgs and gauge boson decays in the LHT
12:30 – 13:00	**N. Mahmoudi** (CERN)	Implications of flavour anomalies for new physics
13:00 – 13:30	**A.Crivellin** (PSI)	Explaining the flavour anomalies with New Physics

13:30 - 16:00	Lunch break	
16:00 - 16:30	**R. Zwicky** (Edinburgh U.)	A survey of Flavour Anomalies
16:30 - 17:00	**S. King** (U Southampton)	Flavourful Z' models for R_K and R_K*
17:00 – 17:30	**F. Botella** (Valencia U)	Controlled Flavour Changing Neutral Couplings in Two Higgs Doublet Models
17:30 - 18:00	**B. Grzadkowski** (Warsaw U.)	On the proper treatment of Breit-Wigner resonances in cosmology
20.30	**Conference Dinner**	

Wednesday 6th of September

9:30 – 10:00	**P. Osland** (U. of Bergen)	Spontaneous CP violation in Multi-Higgs Models. The S_3 symmetric case
10:00 – 10:30	**O. Vives** (Univ. of Valencia & CSIC)	Flavour in Supersymmetry after LHC
10:30 – 11:00	**S. Pigazzini** (U. & INFN, Milano-Bicocca (IT))	Recent Exotics and beyond the SM results in ATLAS and CMS
11:00 - 11:30	Coffee break	
11:30 - 12:00	**M. Chala** (IFIC)	Collider signals of models with radiatively-induced neutrino masses
12:00 - 12:30	**K. R. Schmidt-Hoberg** (DESY)	Revisiting fine-tuning in the MSSM
12:30 – 13:00	**K. Choi** (KAIST)	Hierarchical couplings and scales with generalized linear dilaton mode
13:00 – 13:30	**H.M. Lee** (CAU - Chung-Ang University)	Gauged U(1) clockwork
13:30 - 16:00	Lunch break	
16:00 - 16:30	**G. Ross** (U. of Oxford)	Weyl Current, Scale-Invariant Inflation and Planck Scale Generation
16:30 - 17:00	**M. Raidal** (National Inst. of Chemical Physics and Biophysics)	Dark Matter, Inflation and Primordial Black Holes
17:00 – 17:30	**P. Ko** (Korea Inst. for Advanced Study)	Dark gauge symmetries and dark matter-dark radiation interactions for the Hubble constant and the structure growth rate
17:30-18:00	**C. Charmousis** (Paris-Sud University)	Self tuning the cosmological constant
18:00 - 18:30	Coffee break	

18:30 - 18:45	**P. Anastasopoulos** (TU Wien)	Yukawas of light stringy states

Thursday 7th of September

9:00 – 10:00	**E. Elsen** (CERN)	Towards the Update of the European Strategy for Particle Physics
10:00 – 10:30	**P. Roloff** (CERN)	CLIC overview
10:30 – 11:00	**A. De Roeck** (CERN)	The Future Circular Colliders project
11:00 - 11:30	Coffee break	
11:30 - 12:00	**G. Landsberg** (Brown University)	Recent SUSY results at CMS
12:00 - 12:30	**J. Mamuzic** (IFIC Valencia)	Recent SUSY results in ATLAS
12:30 – 13:00	**A. Pomarol** (U. Barcelona)	Light scalars: From the lattice to the LHC via holography
13:00 – 13:30	**M. Quiros** (ICREA)	A natural lepton flavour universality violation
13:30 - 16:00	Lunch break	
16:00 - 16:30	**J. Bernabeu** (Universidad de Valencia)	Resonant atom Majorana mixing
16:30 - 17:00	**K. Benakli** (CNRS)	A Minimal Model for Gravitino Dark Matter
17:00 – 17:30	**O. D. Ogreid** (Bergen College University)	Invariants and CP violation in the 2HDM and 3HD
17:30 - 18:00	**G. Zanderighi** (CERN)	The photon PDF
18:00 - 18:30	Coffee break	
18:30 - 19:00	**D. Ghilencea** (IFIN - HH)	SM with spontaneous breaking of quantum scale symmetry
19:00 – 19:30	**J. Kalinowski** (U. Warsaw)	A light singlet at the LHC and DM
19:30 – 19:45	**K. Ocalan** (Middle East Technical U.)	Inclusive and differential vector boson (W, Z) measurements from CMS
19:45 – 20:00	**A. De Maria** (Georg-August-U. Goettingen)	Measurement of H->tautau in the semi leptonic final state using the ATLAS detector

Friday 8th of September

9:00 – 10:00	**P. Wells** (CERN)	ATLAS recent results and future prospects

10:00 – 10:30	**O. Lebedev** (University of Helsinki)	Higgs portal dark matter
10:30 – 11:00	**G. Leontaris** (Ioannina U.)	New Physics Phenomena From F-GUTs

11:00 – 17:00 Excursion

Saturday 9th of September

9:00 – 9:30	**I.Antoniadis** (LPTHE Paris & AEC Bern)	Scale hierarchies and string phenomenology
9:30 – 10:00	**H. Nielsen** (NBI)	The 3.5 keV line presumed from Dark Matte
10:00 – 10:30	**M. Olechowski** (Warsaw U.)	Spin-dependent constraints on neutralino dark matter in (N)MSSM
10:30 – 11:00	**K. Meissner** (Institute of Experimental Physics)	Conformal Standard Model
11:00 - 11:30	Coffee break	
11:30 - 12:00	**M. Lola** (University of Patras	GUT symmetries, Dark Matter and the LHC
12:00 - 12:30	**J. Kersten** (University of Bergen)	Trilinear-Augmented Gaugino Mediation
12:30 – 13:00	**N. Irges** (NTUA)	Towards the effective action of Non-perturbative gauge-Higgs unification
13:00 – 13:30	**M. Mondragon** (U. Mexico)	TBC
13:30 - 16:00	Lunch break	
16:00 - 16:30	**K. Nishiwaki** (Korea Institute for Advanced Study)	Vector-like compositeness meets B-physics R_K(*) anomaly
16:30 - 17:00	**I. de Medeiros Varzielas** (University of Lisbon)	Minima of multi-Higgs potentials with triplets of Delta(3n2) and Delta(6n2)
17:00 – 17:30	**V. Rekovic** (University of Wisconsin-Madison)	LHC upgrade physics in CMS
17:30 - 18:00	**A. Studenikin** (Moscow State University)	Electromagnetic neutrinos: theory, experimental limits and phenomenology
18:00 - 18:30	Coffee break	
18:30 - 19:00	**C.Pallis** (University of Cyprus)	B-L Higgs Inflation in Supergravity with Several Consequences
19:00 – 19:30	**R. Watanabe** (University of Montreal)	Hidden sector explanation of B decay and cosmic ray anomalies

19:30 – 19:45	**A. Lymperis** (Patras U.)	Sudden Future Singularities in Quintessence and Scalar-Tensor Quintessence Models

Sunday 10th of September

9:00 – 9:30	**T. Hahn** (MPI f. Physik)	Loopedia, a Database for Loop Integrals
9:30 – 10:00	**E. J. Chun** (Korea Institute for Advanced Study)	Baryogenesis and n-nbar oscillation from R-parity violation
10:00 – 10:30	**M. Nemevsek** (Institute Jozef Stefan)	Hunting Majorana Higgses at colliders
10:30 – 11:00	**T. Matsui** (KIAS)	Gravitational waves from the first order electroweak phase transition in the Z_3 symmetric singlet scalar model

Closing!

The ***ΛCDM and Beyond: Cosmology Tools in Theory and in Practice. A CANTATA Cost-Action Summer School*** has attracted 60 seniors and young scientist in total, 20 of them were invited lecturers, and 40 of them have presented their current research project as workshop speakers.

The invited lecturers were the following:

C. Carbone, (University of Milan), J. Chluba (University of Manchester), K. Koyama (University of Portsmouth), M. Kuntz (Université de Genève), M. Martinelli (University of Leiden), S. Riemer-Sørensen, (University of Oslo), T. Tram (AARHUS University), I. K. Wehus (University of Oslo)

The full programme of the Workshop was the following:

Monday 4th of September

Registration Day

Tuesday 5th of September

9:00-11:00	**J. Chluba** (University of Manchester)	History of the Universe: the physics of the FLRW background
11:00-11:30	Coffee Break	
11:30-13:30	**J. Chluba** (University of Manchester)	History of the Universe: the physics of the FLRW background

13:30-4:00	Lunch Break	
4:00-5:45	**I. K. Wehus** (University of Oslo)	Cosmological perturbation theory and the CMB
5:45-6:00	Coffee Break	
6:00-8:00	**I. K. Wehus** (University of Oslo)	Cosmological perturbation theory and the CMB

Wednesday 6th of September

9:00-11:00	**M. Kunz** (University of Geneva)	Dark Energy and Modified Gravity
11:00-11:30	Coffee Break	
11:30-13:30	**M. Kunz** (University of Geneva)	Dark Energy and Modified Gravity
13:30-4:00	Lunch Break	
4:00-5:45	**M. Martinelli** (University of Leiden)	CAMB Workshop
5:45-6:00	Coffee Break	
6:00-8:00	**M. Martinelli** (University of Leiden)	CAMB Workshop

Thursday 7th of September

9:00-11:00	**J. Chluba** (University of Manchester)	History of the Universe: the physics of the FLRW background
11:00-11:30	Coffee Break	
11:30-13:30	**J. Chluba** (University of Manchester)	History of the Universe: the physics of the FLRW background
13:30-4:00	Lunch Break	
4:00-5:45	**I. K. Wehus** (University of Oslo)	Cosmological perturbation theory and the CMB
5:45-6:00	Coffee Break	
6:00-8:00	**I. K. Wehus** (University of Oslo)	Cosmological perturbation theory and the CMB

Friday 8th of September

9:00-11:00	**J. Chluba** (University of Manchester)	History of the Universe: the physics of the FLRW background

11:00-11:30	Coffee Break	
11:30-13:30	**J. Chluba** (University of Manchester)	History of the Universe: the physics of the FLRW background
13:30-4:00	Lunch Break	
4:00-5:45	**I. K. Wehus** (University of Oslo)	Cosmological perturbation theory and the CMB
5:45-6:00	Coffee Break	
6:00-8:00	**I. K. Wehus** (University of Oslo)	Cosmological perturbation theory and the CMB

Saturday 9th of September

9:00-11:00	*Mariateresa Crosta et al: Gender Balance activity*
11:00-11:30	Coffee Break
11:30-13:30	*Mariateresa Crosta et al: Gender Balance activity*
13:30-4:00	Lunch Break
Free Afternoon	

Sunday 10th of September

9:00-11:00	**C. Carbone** (INAF-Osservatorio Astronomico di Brera and Milan U.)	Observational probes
11:00-11:30	Coffee Break	
11:30-13:30	**C. Carbone** (INAF-Osservatorio Astronomico di Brera and Milan U.)	Observational probes
13:30-4:00	Lunch Break	
4:00-5:45	**M. Martinelli** (University of Leiden)	CAMB Workshop
5:45-6:00	Coffee Break	
6:00-8:00	**M. Martinelli** (University of Leiden)	CAMB Workshop

Monday 11th of September

9:00-11:00	**C. Carbone** (INAF-Osservatorio Astronomico di Brera and Milan U.)	Observational probes

11:00-11:30	Coffee Break	
11:30-13:30	**S. Riemer-Sørensen** (University of Oslo)	Statistics and model selection in cosmology
13:30-4:00	Lunch Break	
4:00-5:45	**T. Tram** (AARHUS U.) **M. Zumalacarregui** (NORDITA)	CLASS, HI_CLASS, MontePython for parameter extraction and Bayesian inference
5:45-6:00	Coffee Break	
6:00-8:00	**T. Tram** (AARHUS U.) **M. Zumalacarregui** (NORDITA)	CLASS, HI_CLASS, MontePython for parameter extraction and Bayesian inference

Tuesday 12nd September

9:00-11:00	**S. Riemer-Sørensen** (University of Oslo)	Statistics and model selection in cosmology
11:00-11:30	Coffee Break	
11:30-13:30	**K. Koyama** (University of Portsmouth)	Nonlinearity in cosmology
13:30-4:00	Lunch Break	
4:00-5:45	**T. Tram** (AARHUS U.) **M. Zumalacarregui (NORDITA**)	CLASS, HI_CLASS, MontePython for parameter extraction and Bayesian inference
5:45-6:00	Coffee Break	
6:00-8:00	**T. Tram** (AARHUS U.) **M. Zumalacarregui** (NORDITA)	CLASS, HI_CLASS, MontePython for parameter extraction and Bayesian inference

Wednesday 13rd of September

9:00-11:00	**K. Koyama** (University of Portsmouth)	Nonlinearity in cosmology
11:00-11:30	Coffee Break	
11:30-13:30	**K. Koyama** (University of Portsmouth)	Nonlinearity in cosmology
13:30-4:00	Lunch Break	

4:00-5:45	**T. Tram** (AARHUS U.) **M. Zumalacarregui** (NORDITA)	CLASS, HI_CLASS, MontePython for parameter extraction and Bayesian inference
5:45-6:00	Coffee Break	
6:00-8:00	**T. Tram** (AARHUS U.) **M. Zumalacarregui** (NORDITA)	CLASS, HI_CLASS, MontePython for parameter extraction and Bayesian inference

Thursday 14th of September Excursion

Friday 15th of September

9:00-11:00	Final Discussion
11:00-11:30	Coffee Break
11:30-13:30	Final Discussion
13:30-4:00	Lunch Break
4:00-5:45	**Departure**

The ***"Workshop on Particle Physics and Cosmology TOOLS"*** was dedicated to **Pierre Binétruy**. It has attracted ~ 50 senior and young scientists in total. Twenty five of them have presented their current research project as workshop speakers.

The full programme of the Workshop was the following:

Saturday 9th of September

Arrival Day/Registration

Sunday 10th of September

11:.00-11.15	**F. Boudjema** (LAPTh, Annecy)	Welcome - presentation
11:15 - 12:15	**P. Richardson** (CERN & IPPP, Durham University)	Collider tools
12:15 - 13:15	**G. Luisoni** (CERN)	N(N)LO calculations
13:15 - 16:00	Lunch break	
16:00 - 16:30	**M. Schoenherr** (Universitaet Zuerich (CH))	Parton showers matching / merging

16:30 - 17:00	**G. Soyez** (IPhT, CEA Saclay)	Jet physics and boosted objects: Theory
17:30 – 18:00	Coffee Break	
18:00 – 19:00	**G. Soyez** (IPhT, CEA Saclay)	Hands on collider tools - jets and boosted objects
19:00 – 20:00	**A. Buckley** (Glasgow Uni.)	Hands on collider tools - Rivet

Monday 11th of September

9:00 – 09:45	**G. Belanger** (LAPTh)	Overview Talk: Dark Matter tools
9:45 – 10:30	**P. Gondolo** (Utah Uni.)	Relic density calculation
10:30-11:00	Coffee break	
11:00 - 11:45	**R. Catena** (Chalmers Univ.)	Direct detection calculations
11:45 - 12:30	**M. Cirelli** (CNRS LPTHE Jussieu)	Indirect Detection
13:15 - 16:00	Lunch break	
16:00 - 17:30	**J. Edsjo** (Stockholm University)	Hands on dark matter codes - DarkSUSY
17:30-18:00	Coffee break	
18:00 – 19:30	**A. Pukhov** (SINP, MSU)	Hands on dark matter codes - MicrOMEGAs

Tuesday 12th of September

9:00 – 09:45	**J. Butterworth** (University College London)	Collider codes - the experimentalist standpoin
9:45 – 10:30	**B. Fuks** (LPTHE)	BSM@Collider tools
10:30-11:00	Coffee break	
11:00 - 12:30	**O. P. C Mattelaer** (U.C. Louvain / CERN)	Hands on collider tools - FeynRules, MG5_aMC, NLO, (B)SM, ...
12:30 – 13:30	**P. Richardson** (CERN & IPPP, Durham University)	Hands on collider tools - Herwig
13:30 - 16:00	Lunch break	
16:05 - 16:35	**M. Boudaud** (LPTHE)	USINE
16:35-17:05	**W. Waltenberger** (HEPHY VIENNA)	CLUMPY
17:05 – 17:35	**A. Kvellestad** (Nordita)	Hands on collider tools - Gambit

Wednesday 13th of September

9:00 – 09:30	**T. Hahn** (MPI f. Physik)	FormCalc and FeynArts
9:30 – 10:00	**H. Bahl** (Max-Planck für Physik, München)	FeynHiggs
10:00-10:30	**E. Conte** (Institut Pluridisciplinaire Hubert Curien)	LHC results reinterpretation tools
10:30 - 11:00	Coffee break	
11:00 – 11:30	**P. Scott** (Imperial College London)	Gambit
11:30-12:00	**J. Reuter** (DESY Hamburg, Germany)	Whizard
12:00 – 12:30	**S. Jahn** (MPI)	PySecDec
12:30 – 13:15	Closing Remarks	
13:30 - 16:00	Lunch break	
16:00-19:00	**Guided tour with bus**	
20:30	**Conference Dinner**	

The "***COST Training School Quantum Spacetime and Physics Models"*** has attracted 64 senior and young scientists in total. Among the seniors were five lecturers presenting series of courses, one was presenting a mini-course and two were presenting research seminars. In addition twenty young scientists were selected to present their current research projects.

The invited School Lecturers were:

L. Castellani (U Piemonte Orientale), C. Hull (Imperial College), H. Kawai (Kyoto U), F. Lizzi (U Napoli Federico II), V. Rivasseau (U Paris XI), R. Szabo (Heriot-Watt U) and the invited seminar speakers were A. Chamseddine (American University of Beirut) and W. Van Suijlekom (Radboud University, Nijmegen).

The full programme of the School was the following:

Friday 16th of September

Arrival Day/Registration

Sunday 17th of September

8:45 - 9:00	Introduction	
9:00 - 10:00	**F. Lizzi** (Università di Napoli Federico II)	Noncommutative Geometry and Particle Physics 1
10:00 – 11:00	**L. Castellani** (Università Piemonte Orientale)	Noncommutative Geometry and Gravity 1
11:00 – 11:30	Coffee break	
11:30 – 12:30	**H. Kawai** (Kyoto University)	Matrix Models and Quantum Spacetime 1
12:30 – 13:00	Young Seminars:	
	E. Chacon Ramirez (Cinvestav-IPN)	Gravity in the theory of twistors and strings
	D. De Filippi (UMONS)	Noncommutative Wilson lines in higher-spin theory and correlation functions of conserved currents for free conformal fields
13:00 - 16:00	Lunch break	
16:00 – 17:00	Young Seminars:	
	M. De Cesare (King's College London)	Cosmological implications of the group field theory approach
	S. Kovacik (Dublin Institute for Advanced Studies)	Magnetic monopoles in noncommutative quantum mechanics
17:00 - 18:30	F. Lizzi/ L. Castellani	Exercise Session
18:30 – 19:00	Coffee Break	
19:00 – 20:00	**V. Rivasseau** (Universite Paris-Sud)	Holographic Tensors 1

Monday 18th of September

9:00 - 10:00	**L. Castellani** (Università Piemonte Orientale)	Noncommutative Geometry and Gravity 2
10:00 – 11:00	**H. Kawai** (Kyoto University)	Matrix Models and Quantum Spacetime 2
11:00 – 11:30	Coffee break	
11:30 – 12:30	**V. Rivasseau** (Universite Paris-Sud)	Holographic Tensors 2
12:30 – 13:00	Young Seminars:	
	A.Deser (INFN Torino)	Pre-NQ manifolds and derived brackets in generalized geometry and double field theory

	P. Jizba (Czech Technical University in Prague)	On Statistical Origin of Special and Doubly Special Relativity
13:00 - 16:00	Lunch break	
16:00 – 17:00	Young Seminars:	
	M. Hewitt (Canterbury Christ Church University)	Fuzzy spheres and quantum information in gravitational collapse
	M. Sperling (Vienna U.)	Fuzzy 4-sphere, matrix models and higher-
	J. Tekel (Comenius University)	Matrix Models of Fuzzy Field Theories
	F. Mele (Università di Napoli Federico II)	Quantum Metric and Entanglement on Spin Networks
17:00 - 18:30	Kawai/Rivasseau	Exercise Session
18:30 – 19:00	Coffee Break	
19:00 – 20:00	**F. Lizzi** (Università di Napoli Federico II)	Noncommutative Geometry and Particle Physics 2

Tuesday 19th of September

9:00 - 10:00	**H. Kawai** (Kyoto University)	Matrix Models and Quantum Spacetime 3
10:00 – 11:00	**V. Rivasseau** (Universite Paris-Sud)	Holographic Tensors 3
11:00 – 11:30	Coffee break	
11:30 – 12:30	**L. Castellani** (Università Piemonte Orientale)	Noncommutative Geometry and Gravity 3
12:30 – 13:00	Young Seminars:	
	R. Toriumi (Radboud University Nijmegen)	Polchinski's exact renormalisation group for tensorial theories
	C. I. Perez Sanchez (Münster U.)	The full Schwinger-Dyson tower for random tensor models
13:00 - 16:00	Lunch break	
16:00 – 17:00	**F. Lizzi** (Università di Napoli Federico II)	Noncommutative Geometry and Particle Physics 3
17:00 - 18:30	Lizzi/Castellani	Exercise Session
18:30 – 19:00	Coffee Break	
19:00 – 20:00	Young Seminars:	
	Yang	A possibility on protection of Higgs mass by the extended Lorentz transformation in noncommutative geometry

	A. Carotenuto (SISSA)	Flat connections on Jordan modules and standard model
	H. Karimi Khozani (American University of Beirut)	Implications of the complex singlet field for noncommutative geometry model
	F. Koutroulis (NTUA)	Renormalization of the Abelian-Higgs Model in the Rξ and Unitary gauges and the physicality of its scalar potential

Wednesday 20th of September

9:00 - 10:00	**R. Szabo** (Heriot-Watt University)	Nonassociativity and Physics 1
10:00 – 11:00	**L. Castellani** (Università Piemonte Orientale)	Noncommutative Geometry and Gravity 4
11:00 – 11:30	Coffee break	
11:30 – 12:30	**F. Lizzi** (Università di Napoli Federico II)	Noncommutative Geometry and Particle Physics 4
12:30 – 13:30	**H. Kawai** (Kyoto University)	Matrix Models and Quantum Spacetime 4
13:30 - 16:00	Lunch break	
	FREE AFTERNOON / CONFERENCE DINNER	

Thursday 21st of September

9:00 - 10:00	**V. Rivasseau** (Universite Paris-Sud)	Holographic Tensors 4
10:00 – 11:00	**R. Szabo** (Heriot-Watt University)	Nonassociativity and Physics 2
11:00 – 11:30	Coffee break	
11:30 – 12:30	**C. Hull** (Imperial)	Double Field Theory 1
12:30 – 13:30	Young Seminars:	
	C. Fritz (Sussex University)	Noncommutative Spherically Symmetric Spacetimes at Semiclassical Order
	I. Gutierrez-Sagredo (University of Burgos)	Curved momentum spaces from quantum groups with cosmological constant
	I. Kuntz (Sussex University)	What is modified gravity and how to differentiate it from particle dark matter?
	I. Lovrekovic (University of Vienna)	Three dimensional higher spin holography

13:30 - 16:00	Lunch break	
16:00 – 16:30	Young Seminars:	
	R. Strajn (Rudjer Boskovic Institute)	Snyder-type spacetimes, twisted Poincare algebra and addition of momenta
	J. Relancio (University of Zaragoza)	Does a deformation of special relativity imply energydependent photon time delays?
16:30-17:30	**F. Lizzi** (Università di Napoli Federico II)	Noncommutative Geometry and Particle Physics 3
17:30-18:30	Kawai/Rivasseau	Exercise Session
18:30 – 19:00	Coffee Break	
19:00 – 20:00	**R. Szabo** (Heriot-Watt University)	Nonassociativity and Physics 3

Friday 22nd of September

9:00 - 10:00	**W. Van Suijlekom** (Radboud University Nijmegen)	Beyond the spectral Standard Model: Pati-Salam unification
10:00 – 11:00	**R. Szabo** (Heriot-Watt University)	Nonassociativity and Physics 4
11:00 – 11:30	Coffee break	
11:30 – 12:30	**C. Hull** (Imperial)	Double Field Theory 2
12:30 – 13:15	Young Seminars:	
	S. Parkhomenko (L. D.Landau Institute for Theoretical Physics)	Generalized Kahler Geometry and current algebras in SU(2) × U(1) N=2 superconformal WZW model.
	D. Osten (MPI)	Spacetimes from integrable deformations
	G. Manolakos (NTUA)	Gravity as a gauge theory in non-commutative
13:15 - 16:00	Lunch break	
16:00 – 17:00	**A. Chamseddine** (American University of Beirut)	Mimetic matter from volume quantization
17:00	Exercise Session Szabo	
18:30 – 19:00	Coffee Break	
19:00 – 20:00	Closing Remarks	

Saturday 23rd of September Departure Date

PROCEEDINGS OF SCIENCE

The Collaboration Meeting "***Probing Strong-Field Gravity in the Advanced GW Detector Era*** (LIGO-Virgo members only)" took place from 18 to 23 September 2017.

The "***Workshop on Testing Fundamental Physics Principles***" has attracted 75 senior and young scientists in total. Twenty five of them have presented their current research project as workshop speakers.

The full programme of the Workshop was the following:

Friday 22nd of September

Arrival Day/ Registration

Saturday 23rd of September

09:45-10:00	Opening *(A. Bassi, C. Curceanu, F. Lizzi, N. Mavromatos, G. Savvidy, G. Zoupanos)*	
10:00 – 10:30	**P. Aschieri** (Universita' Piemonte Orientale)	Observables and Dispersion Relations in κ-Minkowski and κ-FRW noncommutative
10:30-11:00	**I. Florakis** (LPTHE, Paris)	Supersymmetry breaking in heterotic strings and the decompactification problem
11:00-11:30	Coffee break	
11:30 - 12:00	**U. Lindstrom** (Uppsala)	Uses of Sigma Models
12:00-12:30	**S. Capozziello** (University of Naples "Federico II")	Addressing the missing matter problem in galaxies through a new fundamental gravitational radius
12:30-13:00	**P. Martinetti** (Università di Genova)	Beyond the standard model with noncommutative geometry
13:00 - 16:00	Lunch break	
16:00 - 16:30	**C. Hull** (Imperial)	Gravity and Fundamental Physics
16:30-17:00	**H. Steinacker** (Univ. Vienna)	Emergent gravity and higher spin on the fuzzy 4-sphere
17:00-17:30	**G. Savvidy** (Demokritos Nat.Res.Cent.)	Gravity with a Linear Action and Gravitational Singularities
17:30-18:00	Coffee break	
18:00-18:30	**A. Chamseddine** (American University of Beirut)	NCG as basis of unification
18:30-19:00	**E. Plauschinn** (LMU Munich)	Unwinding strings in semi-flatland

Sunday 24th of September

9:30-10:00	**D. Oriti** (MPI)	The universe as a quantum gravity condensate
10:00 – 10:30	**R. Blumenhagen** (MPI)	Quantum Gravity Constraints on Large Field Inflation
10:30-11:00	**N. Obers** (Niels Bohr Institute)	Non-Lorentzian Geometry in String Theory and Holography
11:00-11:30	Coffee break	
11:30 - 12:00	**G. Cardoso** (IST Lisbon)	A double copy for N=2 supergravity in four dimensions
12:00-12:30	**P. Salati** (LAPTh and USMB)	Dark Matter: Neptune or Vulcan?
12:30-13:00	**P. Moskal** (Jagiellonian University)	Searches for discrete symmetries violation inortho-positronium decay
13:00 - 16:00	Lunch break	
16:00 - 16:30	**P. Luo** (Huazhong University of Science and Technology)	Test of hypothetical forces at the micrometer and nanometer range
16:30-17:00	**E. Wison-Ewing** (University of New Brunswick)	Testing loop quantum cosmology
17:00-17:30	A. **Porzio** (CNR - SPIN and INFN, Naples, Italy)	GINGER - Toward an experimental test of General Relativity
17:30-18:00	Coffee break	
18:00-18:30	**C. Shao** (Huazhong University of Science and Technology)	Analyzing local Lorentz violation with gravitational experiments
18:30-19:00	**Y. Tan** (Huazhong University of Science and Technology)	Relativistic effects in atom gravimeters
19:00-19:30	**G. Fiore** (Università Federico II and INFN, Napoli)	Fuzzy circle and new fuzzy sphere through confining potentials and energy cutoffs

Monday 25th of September

9:20-10:00	**C. Wetterich** (ITP - Heidelberg)	Dark Energy and Quantum Gravity
10:00 – 10:30	**A. Di Domenico** (Sapienza University & INFN Rome)	CPT, entanglement and neutral Kaons
10:30-11:00	**B. Hiesmayr** (Vienna U.)	New Medical Imaging by Quantum Information from Positronium Decay
11:00-11:30	Coffee break	

11:30 - 12:00	**V. Mitsou** (Valencia U.)	The Quest for Magnetic Monopoles: Past, Present and Future
12:00-12:30	**L. Bravina** (Oslo U.)	Search for signatures of phase transitions in ultra relativistic relativistic heavy ion collisions.
12:30-13:00	**J. Marton** (Stefan Meyer Institute)	VIP2 A high sensitivity test of the Pauli ExclusionPrinciple For electrons in the LNGS laboratory underground
13:00 - 16:00	Lunch break	
16:00 - 16:30	**P. Traina** (INRIM)	Quantum enhanced holometer
16:30-17:00	**G. Gionti** (Vatican Observatory and LNF-INFN	Analysis of Lorentzian sub-Planckian Cosmologies via Asymptotic Safety
17:00-17:30	Coffee break	
17:30-18:00	**D. O'Conno**r (Dublin Institute for Advanced Studies)	The phase diagram of the BMN matrix
18:00-18:30	**C. Perez Martin** (Universidad Complutense de Madrid)	Do Unimodular Gravity and General Relativity have the same S matrix?
18:30-19:00	**M. Agathos** (DAMTP - University of Cambridge)	Tests of General Relativity with LIGO-Virgo detections

Tuesday 26th of September

9:30-10:10	**H. P. Nilles** (Univ. Bonn)	The quest for primordial tensor modes
10:10-10:40	**A. Spallicci** (Université d'Orléans - CNRS)	Photons in massive and non-linear theories
10:40-11:10	**M. Blasone** (Università di Salerno)	Quantum field theory of neutrino mixing
11:10-11:40	Coffee break	
11:40 - 12:10	**M. Nebot** (CFTP, IST Lisbon)	Probing violations of CPT with Bd mesons
12:10-12:40	**V. Kupriyanov** (MPI Munich)	Deformation quantization of non-geometric backgrounds in M-theory
12:40 - 16:00	Lunch break	
	FREE AFTERNOON / CONFERENCE DINNER	

Wednesday 27th of September

9:30-10:00	K**. Piscicchia** (LNF (INFN))	Testing Dynamical Reduction Models at the underground Gran Sasso Laboratory

10:00 – 10:30	**J. Kim** (Seoul U.)	Anomalous gauge-U(1), 't Hooft mechanism, and "invisible" axion from
10:30-11:00	**I. Rizos** (Ioannina U.)	On Non-Supersymmetric String Phenomenology
11:00-11:30	Coffee break	
11:30 - 12:00	**O. Lechtenfeld** (Leibniz University Hannover)	Pure Yang-Mills solutions on dS4
12:00-12:30	**S. Gonzales Martin** (UAM-IFT)	Quadratic gravity in first order formalism
12:30-13:00	**A. Iorio** (Charles University Prague)	Quasiparticle picture from the Bekenstein bound
13:00 - 16:00	Lunch break	
16:00 - 16:30	**A. Grossardt** (Queen's University Belfast)	Quantum matter on a classical spacetime as a fundamental theory
16:30-17:00	**A. Vinante** (Vinante)	Experimental test of spontaneous collapse models with mechanical systems
17:00-17:30	Coffee break	
17:30-18:00	**D. Andriot** (CERN)	Signatures of extra dimensions in gravitational waves
	Closing	

Thursday 28th of September

Departure Date

Most of the presentations appeared on line in the CORFU2017 homepage just after they were delivered: http://www.physics.ntua.gr/corfu2017/lectures.html

We sincerely thank everybody who contributed to the success of CORFU2017, in particular the young students that came long ways from many different countries. Special thanks are due to all speakers and the organizers, the conference secretary Mrs. Ifigenia Moraiti and the group of our graduate students who helped in various ways and contributed in a very significant manner to the success of the meeting. Finally, we wish to express our gratitude to our sponsors whose financial contribution made it all possible.

They were:

1. COST Action CA15108, Connecting insights in fundamental physics
2. COST Action MP1405, Quantum structure of spacetime (QSPACE)
3. COST Action CA 15117, "CANTATA"

4. ITNs: HiggsTools, Invisibles
5. ERC Grants: LHCtheory Theoretical Predictions and Analyses of LHC Physics: "Advancing the Precision Frontier", LHCTHEORY, HICCUP, “UV-Completion through Bose-Einstein Condensation: A Quantum Model of Black Holes”, “Strings and Gravity”
6. National Technical University of Athens
7. School of Applied Mathematical and Physical Sciences (SAMPS), National Technical Municipality of Corfu
8. University of Athens (NTUA)
9. Region of Ionian Islands
10. OTE: National Telecommunication Company
11. CERN
12. Deutsches Elektronen-Synchrotron (DESY)
13. Max Planck Institute for Physics
14. Max Planck Institute for Gravitational Physics (Albert Einstein Institute)
15. Sommerfeld Center for Theoretical Physics
16. National Center of Scientific Research “Demokritos”
17. Athens University
18. SISSA: Scuola Internazionale Superiore di Studi Avanzati
19. ICTP: The Abdus Salam International Centre for Theoretical Physics
20. IPPP Durham: Institute for Particle Physics Phenomenology
21. LAPP: Laboratoire d'Annecy – le - Vieux de Physique des Particules
22. LAPTH: Laboratoire d'Annecy – le - Vieux de Physique Theorique
23. LPTENS: Laboratoire de physique théorique ENS
24. Universidad Autonoma de Madrid
25. Instituto de Fisica Teorica UAM/CSIC
26. Uppsala University
27. University of Warsaw
28. University of Granada
29. Technical University of Lisbon
30. IFIC Valencia
31. Oxford University
32. Universidad Autonoma de Madrid,
33. Scuola Normale Superiore, Pisa
34. NCSR "Demokritos"
35. ITP Heidelberg
36. CPHT, Ecole Polytechnique
37. Barcelona University
38. Bremen University

39. Cyprus University
40. Geneva University
41. University of Groningen,
42. Imperial College, London
43. University of Lisbon,
44. University Milano-Bicocca,
45. Rome University
46. CEA/Saclay,
47. Tel Aviv University
48. University of Thessaloniki,
49. Turin University

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