

# Foreword to the Proceedings of the Corfu Summer Institute "School and Workshops on Elementary Particle Physics and Gravity" (CORFU2011)

#### 1. Foreword

These are the Proceedings of the scientific activities of the Corfu Summer Institute "School and Workshops on Elementary Particle Physics and Gravity" (CORFU2011) that took place from 4 to 18 September 2011.

We refer to the website:

http://www.physics.ntua.gr/corfu2011/

for all organizational and practical details.

The Corfu Summer Institute has a very long, interesting and successful history. The Corfu Meeting 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 2011" was based on the general format developed and established and tested in all previous Corfu Meetings. This year was hosted again by the newly established European Institute for Science and their Applications. 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 CORFU2011 were held in the conference hall of the garden of Mon Repos in the town of Corfu, which is expected to become the permanent basis of EISA.

Proceedings of the Corfu Summer Institute 2011 "School and Workshops on Elementary Particle Physics and Gravity"

Corfu, Greece
September 4-18, 2011



As in previous events organized in Corfu, there was a number of European Research Networks, European Grants, Institutes and Universities that joined forces organizationally and contributed financial and human resources that led to the success of the Corfu Meetings.

The first event, *School and Workshop on Standard Model and Beyond – Standard Cosmology* (*1st Summer School of ITN: Unification in the LHC Era*) took place from September 4<sup>th</sup> to September 15<sup>th</sup> 2011. It was organized and supported by the ITN "Unification in the LHC Era" and the institutes: Max Planck Institute for Physics, CERN, SAMPS - National Technical University of Athens, Deutsches Elektronen-Synchrotron (DESY), IPPP Durham, LAPP, Sommerfeld Center for Theoretical Physics, SISSA, LPTENS, ICTP, LAPTH, NCSR "Demokritos".

The Scientific Organizers were:

- I. Antoniadis (Ecole Polyt. & CERN)
- E. M. Balli (SISSA)
- G. Lazarides (Thessaloniki U.)
- H. P. Nilles (Bonn U.)
- G. Ross (Oxford U.)
- J. Valle (Valencia U.)
- G. Zoupanos (NTU Athens)

The second event, *Workshop on Noncommutative Field Theory and Gravity*, took place from September 7<sup>th</sup> to 11<sup>th</sup> 2011. It was co-organized by the Courant Research Centre "Higher Order Structures in Mathematics", Goettingen, SAMPS - National Technical University of Athens, Herriot -Watt University, Università del Piemonte Orientale, Universität Wien, and partially supported by the Institutes: Courant Research Centre "Higher Order Structures in Mathematics", Goettingen, SAMPS - National Technical University of Athens, CERN, Deutsches Elektronen-Synchrotron (DESY), Sommerfeld Center for Theoretical Physics, Max Planck Institute for Gravitation Physics (Albert Einstein Institute) and IPPP Durham.

The Scientific Organizers were:

- P. Aschieri (Piemonte Orientale U., Alessandria)
- D. Bahns (Goettingen U.)
- H. Steinacker (Vienna U.)



- R. Szabo (Heriot Watt U.)
- G. Zoupanos (NTU Athens)

The third event, *Workshop on Fields and Strings: Theory - Cosmology - Phenomenology*, took place from September 14<sup>th</sup> to September 18<sup>th</sup> 2012. It was co-organized and supported by ERC Advanced Grant Projects: MassTeV , SUPERFIELDS, ITN: UNILHC, Humboldt Foundation under Alexander von Humboldt Professorship held by Georgi Dvali, and partially supported by SAMPS - National Technical University of Athens, Sommerfeld Center for Theoretical Physics, Max Planck Institute for Physics, Max Planck Institute for Gravitational Physics (Albert Einstein Institute), CERN, LPTENS, University of Patras, Deutsches Elektronen-Synchrotron (DESY), IPPP Durham, LAPTH, SISSA, CPHT Ecole Polytechnique, ITP Heidelberg, ICTP Trieste, U. Patras, NCSR Demokritos.

The Scientific Organizers were:

- I. Antoniadis (Ecole Polyt. & CERN)
- A. T. Ceresole (Turin U.)
- G. Dvali (Munich U., ASC)
- A. Kehagias (NTU Athens)
- C. Kounnas (ENS, Paris)
- D. Luest (Munich U. & MPI, Munich)
- A. Ringwald (DESY)
- S. Theisen (Heidelberg U.)

The outcome was indeed very successful! An impressive element is that these consecutive events attracted about 259 senior and young scientists in total. The School lecturers were about 14 and the Workshop speakers about 92; whereas the young scientists were about 135. Internationally leading scientists have been gathered to participate to the School and Workshops, giving lectures and creating a rather unique and stimulating scientific environment for the senior as well as the young scientists.

More specifically, the *School and Workshop on the Standard Model and Beyond – Standard Cosmology* attracted 133 seniors and young scientist in total, 14 of them were invited school lecturers and 27 of them have presented their current research project as workshop speakers.

The invited review lecturers were the following:

Carlo Angelantonj, Riccardo Barbieri, Enrico M. Bali, Christophe Grojean, Ferruccio Feruglio, Peter Jenni, Kumar S. Narain, Kyriakos Papadodimas, Stefan Pokorski, Albert De Roeck, Subir Sarkar, Aurore Savoy-Navarro, Pierre Vanhove, Giulia Zanderighi,

#### and the workshop speakers:

Kyle Allison, Pascal Anastasopoulos, Elena Mirela Babalic, Markus Bobrowski, Christopher Edward Callaghan James, Valentina De Romeri, Dimitrios Giataganas, Ramona Groeber, Mateusz Iskrzynski, Nikos Karagiannakis, Jonas Lindert, Parvin Moyassari, Pawel Pacholek, Davide Pagani, Constantinos Pallis, Sebastian Passehr, Robert Richter, Francesco Romeo, Filippo Sala, Konstadinos Siampos, Dorota Sokolowska, Andrea Thamm, Riccardo Torre, Daniel Vieira Lopes, Jacques Wagstaff, Merbis Wout.

#### The **full programme** of the School and Workshop was the following:

#### Monday 5 September

09.00-10.00	Theory of EW interactions	Riccardo Barbieri (SNS & INFN, Pisa)
10.00-11.00	Status of experimental searches (Atlas)	Peter Jenni (CERN)
11.00-11.30	Coffee Break	
11.30-12.30	Status of experimental searches (CMS)	Albert De Roeck (CERN)
12.30-13.30	Tevatron 2011, at the time of the LHC	Aurore Savoy-Navarro (LPNHE)
	Tsounami	
13.30-17.00	Lunch Break	
17.00-18.00	Theory of EW interactions	Riccardo Barbieri (SNS & INFN, Pisa)
18.00-19.15	Discussion Session	
19.15-19.30	Coffee Break	
19.30-19.50	Higgs pair production in the composite	Ramona Groeber (Karlsruhe U)
	Higgs model	
19.50-20.10	The basis of dimension-six operators in the	Mateusz Iskrzynski (Warsaw U)
	Standard Model	
20.10-20.30	An isosinglet W 'at the early LHC	Riccardo Torre (Pisa U)
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#### Tuesday 6 September

09.00-10.00	Theory of EW interactions	Riccardo Barbieri (SNS & INFN, Pisa)
10.00-11.00	Theory of EW interactions	Riccardo Barbieri (SNS & INFN, Pisa)



11.00-11.30	Coffee Break	
11.30-12.30	Flavor physics	Ferruccio Feruglio (INFN, U Padova)
12.30-13.30	Flavor physics	Ferruccio Feruglio (INFN, U Padova)
13.30-17.00	Lunch Break	
17.00-18.00	Supersymmetry and Supergravity	Stefan Pokorski (Warsaw U)
18.00-19.00	Discussion Session	-
19.00-19.15	Coffee Break	
19.15-19.35	Radiative flavour violation in SUSY GUT	Markus Bobrowski (Karlsruhe U)
	models	
19.35-19.55	Higgs particle in the MSSM	Sebastian Passehr (MPI Munich)
19.55-20.15	CMSSM with Yukawa Quasi-Unification	Nikos Karagiannakis (AUTH)

## Wednesday 7 September

09.00-10.00	Flavor physics	Ferruccio Feruglio (INFN, U Padova)
10.00-11.00	Flavor physics	Ferruccio Feruglio (INFN, U Padova)
11.00-11.30	Coffee Break	
11.30-12.30	Supersymmetry and Supergravity	Stefan Pokorski (Warsaw U)
12.30-13.30	Supersymmetry and Supergravity	Stefan Pokorski (Warsaw U)
13.30-17.00	Lunch Break	
17.00-18.00	String theory	Pierre Vanhove (IPT & IHES)
18.00-19.00	Discussion Session	
19.00-19.15	Coffee Break	
19.15-19.35	Soft masses in SUSY SO(10) GUTs with low	Valentina De Romeri (Valencia U)
	intermediate scales	
19.35-19.55	Direct stau production at hadron colliders	Jonas Lindert (MPI Munich)
	in cosmologically motivated scenarios	
19.55-20.15	Constraints on minimal Z' models from	Pawel Pacholek (Warsaw U)
	SO(10) GUTs	

## Thursday 8 September

09.00-10.00	Collider physics and data analysis	Giulia Zanderighi (Oxford U)
10.00-11.00	Collider physics and data analysis	Giulia Zanderighi (Oxford U)
11.00-11.30	Coffee Break	
11.30-12.30	Supersymmetry and Supergravity	Stefan Pokorski (Warsaw U)
12.30-13.30	String theory	Pierre Vanhove (IPT & IHES)



13.30-17.00	Lunch Break	
17.00–18.00	String theory	Pierre Vanhove (IPT & IHES)
18.00-19.00	Discussion Session	
19.00-19.15	Coffee Break	
19.15-19.35	Strong Triple Higgs Production at CLIC	Andrea Thamm (CERN, EPFL)
19.35-19.55	Measurement of tracking efficiency at CMS	Francesco Romeo (Perugia U)
	with the $D^*$ -> $D0$ pi helicity mehtod	Ţ
19.55-20.15	In SUSY with a $U(2)^3$ flavour symmetry	Filippo Sala (Pisa U)

## Friday 9 September

09.00-10.00	Collider physics and data analysis	Giulia Zanderighi (Oxford U)
10.00-11.00	Collider physics and data analysis	Giulia Zanderighi (Oxford U)
11.00-11.30	Coffee Break	
11.30-12.30	Astroparticle physics and cosmology	Subir Sarkar (Oxford U)
12.30-13.30	Astroparticle physics and cosmology	Subir Sarkar (Oxford U)
13.30-17.00	Lunch Break	
17.00-18.00	Applications of AdS/CFT	Kyriakos Papadodimas (CERN)
18.00-19.00	Discussion Session	
19.00-19.15	Coffee Break	
19.15-19.35	Baryogenesis in an extended nuMSM model	Kyle Allison (Oxford U)
19.35-19.55	Combining F-Term Hybrid Inflation with a	Constantinos Pallis (Cyprus U)
	Peccei-Quinn Phase Transition	
19.55-20.15	Constraints for quartic couplings in Inert	Dorota Sokolowska (Warsaw U)
	Doublet Model	

## Saturday 10 September

09.00-10.00	String theory	Pierre Vanhove (IPT & IHES)
10.00-11.00	Astroparticle physics and cosmology	Subir Sarkar (Oxford U)
11.00-11.30	Coffee Break	
11.30-12.30	Applications of AdS/CFT	Kyriakos Papadodimas (CERN)
12.30-13.30	Applications of AdS/CFT	Kyriakos Papadodimas (CERN)
13.30-17.00	Lunch Break	
17.00-18.00	Astroparticle physics and cosmology	Subir Sarkar (Oxford U)
18.00-19.00	Discussion Session	
19.00-19.15	Coffee Break	



19.15-19.35	Flavor Corrections in the Static Potential	Dimitrios Giataganas (Witwatersrand U)
	in Holographic QCD	
19.35-19.55	A Holographic Approach to Non-	Merbis Wout (Groningen U)
	relativistic Logarithmic CFT's	
19.55-20.15	A compelling vector curvation Model and	Jacques Wagstaff (AUTH)
	its distinct observational signature	

Sunday 11 September

Excursion

## Monday 12 September

09.00-10.00	Extra dimensions and braneworlds	Christophe Grojean (CERN &IPT
		Saclay)
10.00-11.00	String model building	Carlo Angelantonj (INFN, U Turin)
11.00-11.30	Coffee Break	
11.30-12.30	String model building	Carlo Angelantonj (INFN, U Turin)
12.30-13.30	Applications of AdS/CFT	Kyriakos Papadodimas (CERN)
13.30-17.00	Lunch Break	
17.00-18.00	Adv. math. techniques in physics	Kumar S. Narain (ICTP)
18.00-19.00	Discussion Session	
19.00-19.15	Coffee Break	
19.15-19.35	One-loop Adjoint Masses for Non-	Pascal Anastasopoulos (TU Vienna)
	Supersymmetric Intersecting Branes	
19.35-19.55	Model Building with F-theory GUTs	Christopher Edward Callaghan James
		(Southampton U)
19.55-20.15	Light string states and their potential	Robert Richter (Roma U)
	observation at LHC	

## Tuesday 13 September

09.00-10.00	String model building	Carlo Angelantonj (INFN, U Turin)
10.00-11.00	String model building	Carlo Angelantonj (INFN, U Turin)
11.00-11.30	Coffee Break	
11.30-12.30	Extra dimensions and braneworlds	Christophe Grojean (CERN & Saclay)
12.30-13.30	Adv. math. techniques in physics	Kumar S. Narain (ICTP)
13.30-17.00	Lunch Break	



17.00-18.00	Extra dimensions and braneworlds	Christophe Grojean (CERN &IPT
		Saclay)
18.00-19.00	Discussion Session	
19.00-19.15	Coffee Break	
19.15-19.35	The Effective Action of Branes and Mirror	Daniel Vieira Lopes (Bonn U)
	Symmetry	_
19.35-19.55	The Electroweak contribution to the top	Davide Pagani (MPI)
	forward-backward asymmetry at Tevatron	C
19.55-20.15	Some aspects on the correlation between the	Elena Mirela Babalic (IFIN-HH
	K-symmetric and the pure spinor versions of	Bucharest)
	the supermembrane in D=11	

## Wednesday 14 September

09.00-10.00	Adv. math. techniques in physics	Kumar S. Narain (ICTP)
10.00-11.00	Adv. math. techniques in physics	Kumar S. Narain (ICTP)
11.00-11.30	Coffee Break	
11.30-12.30	Extra dimensions and braneworlds	Christophe Grojean (CERN & Saclay)
12.30-13.30	Science communication	Enrico M. Bali (SISSA)
13.30-17.00	Lunch Break	
17.00-18.00	Science communication	Enrico M. Bali (SISSA)
18.00-19.00	Discussion Session	
19.00-19.15	Coffee Break	
19.15-19.35	ABJM Baryon Stability and Myers effect	Konstadinos Siampos (Ecole
		Polytechnique)
19.35-19.55	String cosmology at finite temperature	Lihui Liu (Ecole Polytechnique)
19.55-20.15	Introducing the Slotheon: the unique	Parvin Moyassari (LMU)
	Galilean invariant scalar in curved	
	spacetime	

Thursday 15 September Mid Term Meeting of the ITN.

Dinner in honour of Professor Graham Ross.

The *Workshop on Noncommutative Field Theory and Gravity* attracted 94 senior and young scientists in total, and 28 of them have presented their current research project.

The workshop speakers were:

John Barrett, Francesco Bonechi, Tomasz Brzezinski, Alberto Cattaneo, Athanasios Chatzistavrakidis, Chong-sun Chu, Chryssomalis Chryssomalakos, Marija Dimitrijevic, Mauro Francaviglia, Thupil Govindarajan, Viacheslav Khruschov, Olaf Lechtenfeld, Fedele Lizzi, Pierre Martinetti, Catherine Meusburger, Erik Plauschinn, Sanjaye Ramgoolam, Christian Saemann, Mairi Sakellariadou, Naoki Sasakura, Alexander Schenkel, Peter Schupp, Harold Steinacker, Walter van Suijlekom, Zhituo Wang, Satoshi Watamura, Hyun Seok Yang, Maxim Zabzine.

The **full programme** of the workshop was the following:

Wednesday 7 September *Arrival Day* 

#### Thursday 8 September

9.30-10.20	Renormalization of the Yang-Mills spectral	Walter van Suijlekom (Nijmegen U)
	action	
10.20-10.50	Bundles over quantum projective spaces	Tomasz Brzezinski (Swansea U.)
10.50-11.20	Coffee Break	
11.20-11.50	Twist deformations of module	Alexander Schenkel (Wurzburg U.)
	homomorphisms and connections	
11.50-12.20	Split noncommutativity and compactified	Harold Steinacker (Vienna U.)
	brane solutions in matrix models	
12.20-16.00	Lunch break	
16.00-16.50	Minimal length in quantum space and	Pierre Martinetti (Univ. Roma)
	integration of the line element in	
	noncommutative geoemtry	
16.50-17.20	From the Ehlers-Pirani-Schild analysis on	Mauro Francaviglia (Torino U.)
	the foundations of gravitational theories to	
	extended theories of gravity and dark matter	
17.20-17.50	Coffee Break	
17.50-18.20	Nambu Sigma Model	Peter Schupp (Bremen U.)
18.20-18.40	Quantization of the symplectic groupoid	Francesco Bonechi (INFN, Firenze)



## Friday 9 September

9.30-10.20	Quantum Nambu Bracket in String theory	Chong-sun Chu (Durham U.)
10.20-10.50	Strings, permutations and quantum fields	Sanjaye Ramgoolam (Queen Mary, U.
		London)
10.50-11.20	Coffee Break	
11.20-11.50	Quantization of 2-plectic Manifolds	Christian Saemann (Heriot-Watt U.)
11.50-12.20	Non-commutative branes and model building	Athanasios Chatzistavrakidis
	in the type IIB matrix model	(Bonn U.)
12.20-12.40	Non-geometric Fluxes, Asymmetric Strings	Erik Plauschinn (Utrecht U.)
	and Nonassociative Geometry	
12.40-16.00	Lunch break	
16.00-16.50	Classical and perturbative topological field	Alberto Cattaneo (Zurich U.)
	theories with boundary	
16.50-17.20	Perturbative theory of general 3d TFT	Maxim Zabzine (Uppsala U.)
17.20-17.50	Coffee Break	
17.50-18.20	Gauge fixing and dynamical r-matrices in	Catherine Meusburger
	(2+1)-gravity	(Erlangen-Nürnberg U.)
18.20-18.50	Induced standard model and the spectral	John Barrett (Nottingham U.)
	action	

## Saturday 10th September

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Spectral action, scale anomaly and the	Fedele Lizzi (Napoli U.)
Higgs-Dilaton potential	
Noncommutative spectral geometry, algebra	Mairi Sakellariadou (King's College
doubling and the seeds of quantization	London)
Coffee Break	
The construction of 2-d Grosse-Wulkenhaar	Zhituo Wang (U Paris XI)
model	
Phase structures in fuzzy geometries	Thupil Govindarajan (IMSc, Chennai)
The Noncommutative Ward Metric	Olaf Lechtenfeld (Hannover U.)
Lunch Break	
Operational geometry and natural	Chryssomalis Chryssomalakos (UNAM)
noncommutativity	
Fuzzy spaces from tensor models, cyclicity	Naoki Sasakura (Yukawa Inst.)
condition, and n-ary algebras	
A twisted look on kappa-Minkowski: U(1)	Marija Dimitrijevic (Belgrade U.)
	Higgs-Dilaton potential  Noncommutative spectral geometry, algebra doubling and the seeds of quantization  Coffee Break  The construction of 2-d Grosse-Wulkenhaar model  Phase structures in fuzzy geometries  The Noncommutative Ward Metric  Lunch Break  Operational geometry and natural noncommutativity  Fuzzy spaces from tensor models, cyclicity condition, and n-ary algebras



	gauge theory	
17.10-17.40	Coffee Break	
17.40-18.00	Nahm transformation and Boundary state in	Satoshi Watamura (Tohoku U.)
	T^2	
18.00-18.20	Calabi-Yau Manifolds, Hermitian Yang-Mills	Hyun Seok Yang (Ewha Womans U.)
	Instantons and Mirror Symmetry	
18.20-18.40	Noncommutative model of color particle	Viacheslav Khruschov (Kurchatov Inst.)
	confinement	

Sunday 11 September *Departure Day* 

The *Workshop on Fields and Strings: Theory - Cosmology - Phenomenology* attracted 143 senior and young scientists in total, and 37 of them presented their current research project.

The workshop speakers were:

Steven Abel, Carlo Angelantonj, Ignatios Antoniadis, Constantin Bachas, Ioannis Bakas, Andrea Campoleoni, Emilian Dudas, Ludvig Faddeev, Sergey Frolov, Christophe Grojean, Stefan Groot Nibbelink, Amihay Hanany, Stefan Hohenegger, Kyriakos Papadodimas, Christopher Hull, Zygmunt Lalak, George Leontaris, Shu Lin, Ulf Lindstrom, Andre Lukas, Dieter Lüst, Jnanadeva Maharana, Tristan McLoughlin, Hans Peter Nilles, Kyriakos Papadodimas, Herve Partouche, Peter Patalong, Roberto Percacci, Marios Petropoulos, Ioannis Rizos, Henning Samtleben, Georgios Savvidy, Konstadinos Sfetsos, George Siopsis, Jacob Sonnenschein, Arkady Tseytlin, Pierre Vanhove, Yuki Watanabe.

#### The **full programme** of the Workshop was the following:

Wednesday 14 September *Arrival Day* 

#### Thursday 15 September

9.00-9.30	Sigma models and complex geometry	Ulf Lindstrom (Uppsala U.)
9.30-10.00	Emergent string geometry from particle	Dieter Lüst (Munich U. and MPI,
9.30-10.00	species	Munich)



10.00-10.30	Duals with broken supersymmetry and their phenomenology	Steven Abel (IPPP Durham)
10.30-11.00	Scaling dimensions from the mirror	Sergey Frolov (Trinity College Dublin)
11.00-11.30	Coffee Break	
11.30-12.00	New variables for the Einstein Theory of Gravitation	Ludvig Faddeev (Stelkov)
12.00-12.30	Heterotic Standard Models from Smooth Calabi-Yau Three-folds	Andre Lukas (Oxford U.)
12.30-13.00	Proton decay and FCNC in local F-theory models	Emilian Dudas (CPHT)
13.00-13.30	Green-Schwarz Mechanism in Heterotic (2,0) Gauged Linear Sigma Models	Stefan Groot Nibbelink (ASC)
13.30-17.00	Lunch break	
17.00-17.30	The relevance of different D-brane wrappings in holographic dimerization	Konstadinos Sfetsos (Patras U.)
17.30-18.00	String theory dualities and supergravity divergences	Pierre Vanhove (IPT & IHES)
18.00-18.30	String Model Building	Carlo Angelantonj (Turin Univ.)
18.30-18.45	Coffee Break	
18.45-19.15	Holographic Three-Point Functions	Tristan McLoughlin (MPI, Potsdam)
19.15-19.45	Asymptotic W-symmetries in 3D higher-spin gauge theories	Andrea Campoleoni (AEI)

## Friday 16 September

9.00-9.30	A not so elementary Higgs boson	Christophe Grojean (CERN)
0.20.10.00	Mass hierarchies in string theory,	Ignatios Antoniadis (CERN)
9.30-10.00	holography and experimental signatures	
10.00-10.30	Trivertices and SU(2)'s	Amihay Hanany (Imp. Coll. London)
10.30-11.00	Towards brane-antibrane inflation in type	Jacob Sonnenschein (Tel Aviv U.)
10.30-11.00	\$II_A\$ Holographic MQCD model	
11.00-11.30	Coffee Break	
11.30-12.00	Discrete symmetries from the heterotic string	Hans- Peter Nilles (Bonn U.)
12.00-12.30	Vacuum selection in the hidden sector and	Zygmunt Lalak (ITP UW)
12.00-12.30	gauge mediation	
12.30-13.00	Holographic fluids with vorticity in 2+1	Marios Petropoulos (Ecole
12.30-13.00	dimensions	Polytechnique)



13.00-13.30	BPS Saturated String Amplitudes K3 Elliptic Genus and Igusa Cusp Form \chi \{10\}	Stefan Hohenegger (MPI Munich)
12 20 17 00		
13.30-17.00	Lunch break	
17.00-17.30	Anomalies, instantons and chiral symmetry	Ioannis Bakas (Patras U.)
17.00-17.50	breaking at a Lifshitz Point	
17.30-18.00	AdS/CFT and the cosmological constant	Kyriakos Papadodimas (CERN)
17.30-18.00	problem	
18.00-18.30	T-duality of massive excited string states	Jnanadeva Maharana (Phys. Inst.)
18.30-18.45	Coffee Break	
18.45-19.15	UV-protected (Natural) Inflation Primordial	Yuki Watanabe (LMU Munich)
10.73-19.13	Fluctuations and non-Gaussian Features	

## Saturday 17th September

Saturday 17th	September	
9.00-9.30	Quasi-localized gravity in string theory	Constantin Bachas (ENS, Paris)
9.30-10.00	Correlation function of null polygonal Wilson	Arkady Tseytlin (Imperial College
	loop with local operator	London)
10.00.10.20	Extension of the Poincare group and Yang-	Georgios Savvidy (Demokritos
10.00-10.30	Mills field.	Nat.Rec.Cent.)
10.30-11.00	New superconformal theories in six	Henning Samtleben (ENS, Paris)
10.30-11.00	dimensions	F
11.00-11.30	Coffee Break	
11 20 12 00	Double Field Theory and Duality	Christopher Hull (Imperial Coll.,
11.30-12.00		London)
12.00-12.30	Holographic superconductors at low	Geroge Siopsis (Tennessee U.)
12.00-12.30	temperatures	
12.30-13.00	Asymptotic safety and Higgsless scenario	Roberto Percacci (SISSA)
13.00-13.30	Aspects of F-theory model building	George Leontaris (Ioannina U.)
13.30-17.00	Lunch break	
17.00-17.30	Top mass and classification of heterotic	Ioannis Rizos (Ioannina U.)
17.00-17.30	superstring vacua	
17.30-18.00	Thermal duality & non-singular superstring	Herve Partouche (Ecole Polytechnique)
	cosmology	
18.00-18.30	A ten-dimensional action for non-geometric	Peter Patalong (MPI, Munich)
	fluxes	
18.30-18.45	Coffee Break	



18.45-19.15	On Stability and Transport of Holographic	Shu Lin (MPI, Munich)
16.43-19.13	Matter	

Sunday 18 September Departure Day

Most of the presentations appeared on line in the CORFU2011 homepage just after they were delivered: http://www.physics.ntua.gr/corfu2011/lectures.html

We sincerely thank everybody who contributed to the success of CORFU2011, 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. Marie Curie Initial Training Network "UNILHC" Unification in the LHC era
- 2. ERC Advanced, Grants MassTeV, SUPERFIELDS
- 3. Courant Research Centres "Higher Order Structures in Mathematics"
- 4. National Technical University of Athens
- 5. School of Applied Mathematical and Physical Sciences (SAMPS), National Technical University of Athens (NTUA)
- 6. Greek State Scholarships Foundation
- 7. Ministry of Education, Lifelong Learning and Religious Affairs
- 8. Greek General Secretariat for Research and Technology
- 9. Municipality of Corfu
- 10. Region of Ionia Nisia
- 11. John S. Latsis Public Benefit Foundation
- 12. OTE: National Telecommunication Company
- 13. CERN
- 14. Deutsches Elektronen-Synchrotron (DESY)
- 15. Max Planck Institute for Physics



- 16. Max Planck Institute for Gravitational Physics (Albert Einstein Institute)
- 17. Sommerfeld Center for Theoretical Physics
- 18. National Center of Scientific Research "Demokritos"
- 19. SISSA: Scuola Internazionale Superiore di Studi Avanzati
- 20. ICTP: The Abdus Salam International Centre for Theoretical Physics
- 21. IPPP Durham: Institute for Particle Physics Phenomenology
- 22. LAPP: Laboratoire d'Annecy le Vieux de Physique des Particules
- 23. LAPTH: Laboratoire d'Annecy le Vieux de Physique Theorique
- 24. LPTENS: Laboratoire de physique théorique ENS
- 25. University of Patras
- 26. University of Athens
- 27. CPHT, Ecole Polytechnique
- 28. Plaisio Computers

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