

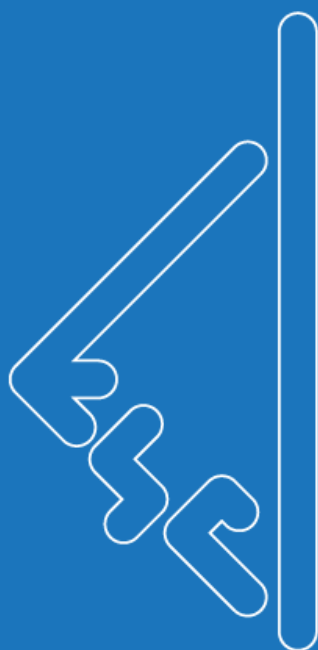
# 2019

05 Mai

11 Mai



**INSTITUT  
D'ÉTUDES  
SCIENTIFIQUES  
DE CARGÈSE**



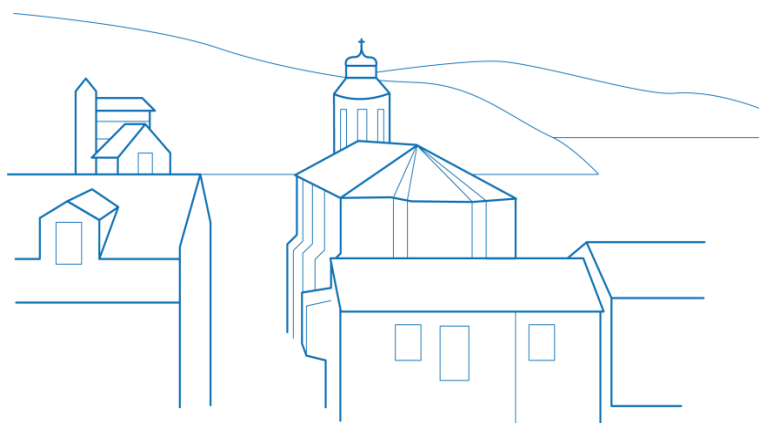
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## HOT TOPICS IN MODERN COSMOLOGY

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CPT Luminy, Marseille, FR



# Hot topics in Modern Cosmology

## Spontaneous Workshop XIII

5 - 11 May 2019 — IESC, Cargèse

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### PROGRAM

#### Monday 6 May 2019

- 08:45 Opening
- 09:00 New data about old black holes
  - *Alexander Dolgov*, Novosibirsk State University and ITEP – RUS
- 09:40 Quantum expectation values on black hole space-times
  - *Elizabeth Winstanley*, The University of Sheffield - GBR
- 10:20 coffee break
- 10:50 The Regge pole approach to black hole physics
  - *Antoine Folacci*, University of Corsica - FRA
- 11:30 Perturbatively renormalizable quantum gravity
  - *Tim Morris*, University of Southampton - GBR
- 12:10 lunch
- 14:00 Fakeons and the classicization of quantum gravity: the FLRW metric
  - *Damiano Anselmi*, University of Pisa - ITA
- 14:40 On renormalizability of Analytic Infinite Derivative (AID) theories
  - *Alexey Koshelev*, Universidade da Beira Interior - PRT
- 15:20 Topological effects in dS QFT
  - *Ugo Moschella*, University dell'Insubria [blackboard] - ITA
- 16:00 coffee break
- 16:30 Quantization in strong scalar fields — pdf (0 Mb)
  - *Emil Akhmedov*, MIPT and ITEP - RUS
- 17:10 Temperature inhomogeneities in the matter-antimatter domains
  - *Alexander Rudenko*, Novosibirsk State University – RUS
- 17:50 The steepest growth of the power spectrum and primordial black hole
  - *Philippa Cole*, University of Sussex – GBR
- 18:10 Investigating gravitational wave propagation and phenomenology in (beyond)-Horndeski theories after GW170817
  - *Michael Kopp*, CEICO – CZE
- 18:20 Exploring Hidden Regimes during Preheating with Effective Field Theory Methods [poster]
  - *Gizem Sengor*, CEICO – CZE
- [\*\*\*] Dedicated experiments on gravitational effects on antimatter in space
  - *Giovanni Piacentino*, University of Molise – ITA
- 18:30 DISCUSSION
- 19:00 Welcome party

#### Tuesday 7 May 2019

- 09:00 Inflation, pre-inflation and post-inflationary heating in the  $R^2$  and mixed  $R^2$ - Higgs models
  - *Alexei A. Starobinsky*, Landau Institute for Theoretical Physics RAS – RUS
- 09:40 Inflation from supersymmetry breaking
  - *Ignatios Antoniadis*, Sorbonne University – FRA
- 10:20 Group photo
- 10:25 coffee break
- 10:50 Scalar fields in cosmology
  - *Orfeu Bertolami*, Universidade do Porto – PRT
- 11:30 Cosmological Signatures of the SM Vacuum Instability
  - *Jose Espinosa*, IIF-UAM/CSIC – ESP
- 12:10 lunch
- 14:00 Nonlocal infrared modifications of gravity and dark energy
  - *Michele Maggiore*, Université de Genève – CHE
- 14:40 Non-dynamical torsion from fermions, inflation and CMBR phenomenology
  - *Antonino Marciano*, Fudan University – CHN

- 15:20 Cosmic inflation, Quantum information and the pioneering role of John S Bell in Cosmology
  - *Jérôme **Martin***, Institut d'Astrophysique de Paris – FRA
- 16:00 coffee break
- 16:30 Sneutrino-Higgs Inflation in Heterotic M-Theory
  - *Burt **Ovrut***, University of Pennsylvania - USA
- 17:10 Chaotic Inflation and No-Scale Gravity
  - *Alberto **Salvio***, University of Rome & INFN Tor Vergata - ITA
- 17:50 Some like it hot: scalaron heals Higgs inflation, but does not cool it
  - *Anna **Tokareva***, Institute for Nuclear Research RAS – RUS
- 18:30 Fresh Look at the Calculation of Tunneling Actions
  - *Jose **Espinosa***, IIFT-UAM/CSIC – ESP
- 18:50 DISCUSSION
- 19:00 The Rosenberg Family Legacy and Recovering Nazi Looted Art [open conference]
  - *Marianne **Rosenberg***, Rosenberg & Co.

### Wednesday 8 May 2019

- 09:00 Massive and Partially Massless Graviton on Curved Space-times
  - *Cedric **Deffayet***, Institut d'Astrophysique de Paris & IHES – FRA
- 09:40 Towards scale invariant theory of gravity
  - *Anupam **Mazumdar***, University of Groningen – NLD
- 10:20 coffee break
- 10:50 On hydrodynamic approach to scalar condensate
  - *Emin **Nugaev***, Institute for Nuclear Research – RUS
- 11:30 Kinetics of supersymmetric relics in  $R^2$  cosmology
  - *Elena **Arbuzova***, Dubna State University – RUS
- 12:10 lunch
- 14:00 excursion

### Thursday 9 May 2019

- 09:00 Dark matter and the origin of UHECR
  - *Zurab **Berezhiani***, Univ. L'Aquila and LNGS – ITA
- 09:40 Colored Dark Matter / Super-cool Dark Matter
  - *Alessandro **Strumia***, Università di Pisa – ITA
- 10:20 coffee break
- 10:50 The Landau-Ginzburg theory of Dark Matter
  - *Philippe **Brax***, IPhT CEA Saclay – FRA
- 11:30 Planckian Interacting Massive Particles as Dark Matter
  - *Martin **Sloth***, University of Southern Denmark – DNK
- 12:10 lunch
- 14:00 Challenging the CDM paradigm : constraining DM properties with the CMB
  - *Stéphane **Ilic***, CEICO – CZE
- 14:40 Exploring the relation between Vlasov and the Schrödinger-Poisson as unifying dynamical description for CDM and massive neutrinos
  - *Michael **Kopp***, CEICO – CZE
- 15:20 Dark Matter accretion on Neutron Stars
  - *Yoann **Genolini***, Université libre de Bruxelles – BEL
- 16:00 coffee break
- 16:30 Voyager probing Dark Matter
  - *Mathieu **Boudaud***, Sorbonne Université – FRA
- 17:10 Cosmology with nonlocal gravity
  - *Sohyun **Park***, CEICO – CZE
- 17:50 Effective field theory for gravitational radiation in scalar-tensor gravity
  - *Adrien **Kuntz***, Aix-Marseille Université – FRA
- 18:10 A Graceful Exit for the Cosmological Constant Damping Scenario
  - *Kevin **Nguyen***, Vrije Universiteit Brussel – BEL
- 18:30 Flavor gauge bosons at the TeV scale
  - *Benedetta **Belfatto***, Gran Sasso Science Institute – ITA
- 18:50 DISCUSSION

- 19:30 **Banquet**

## Friday 10 May 2019

- 09:00 Speeding up the universe using dust with pressure
  - *Orlando **Luongo***, University of Camerino – ITA
- 09:40 Relativistic cosmological simulations in  $f(R)$  gravity
  - *Lorenzo **Reverberi***, CEICO – CZE
- 10:20 coffee break
- 10:50 Large-scale structure bispectrum modelling
  - *Andrei **Lazanu***, Ecole Normale Supérieure - FRA
- 11:30 Testing the efficiency of the ABS method in separating the CMB from foregrounds
  - *Larissa **Santos***, University of Science and Technology of China – CHN
- 12:10 lunch
- 14:00 Gravitational birefringence of light (1)
  - *Pierre **Saturnini***, Laboratoire de Physique de Clermont-Ferrand - FRA
- 14:40 Gravitational birefringence of light (2)
  - *Loic **Marsot***, Aix-Marseille Université – FRA
- 15:20 Gravitational waves background from QCD phase transition and space-time back-reaction
  - *Andrea **Addazi***, Fudan University – CHN
- 16:00 coffee break
- 16:30 Effects of the QCD Equation of State and Lepton Flavor Asymmetry on Primordial Gravitational Waves
  - *Fazlollah **Hajkarim***, Goethe University Frankfurt – DEU
- 17:10 Non-Spherically Symmetric Black Strings Perturbations in the Large D limits
  - *Amruta **Sadhu***, IISER – IND
- 17:30 Fast galaxy catalogue generator for Cl analysis
  - *Philippe **Baratta***, Centre de Physique des Particules de Marseille – FRA
- 17:50 Gravitational birefringence of light (3)
  - *Thomas **Schucker***, Aix-Marseille Université – FRA
- 18:10 DISCUSSION