

Quantum Gravity and Cosmology 2023

April 17-21, 2023, online

Schedule of Talks (40+5min each talk)

Monday 17th April

8:00 AM CEST (14:00 in China)

Welcome from Organizers

Session I, Monday 17th April, Chair: Alexey Koshelev (ShanghaiTech University)

8:15-9:00 AM CEST (14:15-15:00 in China)

Pisin Chen (National Taiwan U. and Stanford)

Black hole information loss paradox and the AnaBHEL experiment

9:00-9:45 AM CEST (15:00-15:45 in China)

Leonardo Modesto (SUSTech, Shenzhen)

Quantum Gravity and Quantum Cosmology

9:45-10:30 AM CEST (15:45-16:30 in China)

Roberto Casadio (Bologna Univ.)

Quantum regular black holes

10:30-11:15 AM CEST (16:30-17:15 in China)

Georgios Karananas (LMU, Munich)

Conformal Symmetry in the Standard Model and its Symbiosis with Gravity

11:15 AM-12:00 PM CEST (17:15-18:00 in China)

Discussions

Session II, Monday 17th April, Chair: Anna Tokareva (Imperial College, London)

13:15-14:00 CEST (19:15-20:00 in China)

Ivano Basile (Mons U.)

Dark energy from dark bubbles

14:00-14:45 CEST (20:00-20:45 in China)

Anish Ghoshal (Warsaw U.)

Primordial Blackhole Archaeology with Gravitational Waves from induced tensor perturbations and cosmic strings

14:45-15:30 CEST (20:45-21:30 in China)

Breno Giacchini (SUSTech, Shenzhen)

Regular black holes, higher derivatives, and the finite action principle

15:30 -16:15 CEST (21:30-22:15 in China)

Georgi Dvali (LMU, Munich)

Black hole basics

16:15-17:00 CEST (22:15-23:00 in China)

Discussions

Tuesday 18th April

Session I Tuesday 18th April, Chair: Luca Buoninfante (Nordita)

8:15-9:00 AM CEST (14:15-15:00 in China)

Yi-Fu Cai (University of Science and Technology of China)

Relics of nonlinear resonances in the primordial universe

9:00-9:45 AM CEST (15:00-15:45 in China)

Masahide Yamaguchi (IBS, Daejeon and Tokyo Tech)

New Dynamical Degrees of Freedom from Invertible Transformations

9:45-10:30 AM CEST (15:45-16:30 in China)

Alexander Vikman (CEICO)

Ghosts without Runaway Instabilities

10:30 AM -11:15 AM CEST (16:30-17:15 in China)

Olaf Hohm (Humboldt, Berlin)

(Quantum) Gravity from Yang-Mills Theory

11:15 AM-12:00 PM CEST (17:15-18:00 in China)

Discussions

Session II Tuesday 18th April, Chair: Alexander Vikman (CEICO)

13:15-14:00 CEST (19:15-20:00 in China)

Astrid Eichhorn (Southern Denmark and CP3-origin)

What can quantum gravity teach us about dark matter?

14:00-14:45 CEST (20:00-20:45 in China)

Ilya Shapiro (Juiz de Fora)

Effective quantum gravity: corrections to Newton's potential and the running of fundamental constants in deep IR

14:45-15:30 CEST (20:45-21:30 in China)

Phillip Mannheim (Connecticut)

Normalization of the vacuum and the ultraviolet completion of Einstein gravity

15:30 -16:15 PM CEST (21:30-22:15 in China)

Ashoke Sen (ICTS, Bengaluru)

D-instanton amplitudes in string theory

16:15-17:00 PM CEST (22:15-23:00 in China)

Discussions

Wednesday 19th April

Session I Wednesday 19th April, Chair: Breno Giacchini (SUSTech, Shenzhen)

9:45-10:30 AM CEST (15:45-16:30 in China)

Alessia Platania (Perimeter Inst.)

Diverging black hole entropy from quantum infrared non-localities

10:30-11:15 AM CEST (16:30-17:15 in China)

Benjamin Knorr (Nordita)

Renormalisation of essential operators in Asymptotic Safety - a status report

11:15-12:00 PM CEST (17:15-18:00 in China)

Luca Buoninfante (Nordita)

Decoupling limits in Renormalizable Quantum Gravity

12:00-12:45 PM CEST (18:00-18:45 in China)

Discussions

Session II Wednesday 19th April, Chair: David Wands (ICG, Portsmouth)

14:00-14:45 CEST (20:00-20:45 in China)

Jean-Luc Lehnars (Max Planck Inst., Potsdam)

How to create universes with internal flux

14:45-15:30 CEST (20:45-21:30 in China)

Laura Iacconi (Queen Mary U. London)

Multi-field inflation with large scalar fluctuations: non-Gaussianity and perturbativity

15:30-16:15 CEST (21:30-22:15 in China)

Richard Woodard (Florida)

Remembrance of Things Past

16:15-17:00 CEST (22:15-23:00 in China)

Andrei Linde (Stanford)

Hybrid cosmological attractors and primordial black holes

17:00-17:45 (23:00-23:45 in China)

Discussions

Thursday 20th April

Session I Thursday 20th April, Chair: Sravan Kumar (University of Portsmouth)

9:45-10:30 AM CEST (15:45-16:30 in China)

Alexander Dolgov (Novosibirsk, JINR)

PBH, antimatter, and HST/JWST data

10:30-11:15 AM CEST (16:30-17:15 in China)

Luca Smaldone (Warsaw Univ.)

Quantum black holes as classical-space factories

11:15 AM-12:00 PM CEST (17:15-18:00 in China)

Roberto Percacci (SISSA, Trieste)

Some results on quantum Metric-Affine Gravity

12:00-12:45 PM CEST (18:00-18:45 in China)

Discussions

Session II Thursday 20th April, Chair: Alexei A. Starobinsky (Landau Inst.)

14:00-14:45 CEST (20:00-20:45 in China)

Roger Penrose (Oxford)

The Second Law of Thermodynamics: From Black Hole Singularities to Conformal Cyclic Cosmology

14:45-15:30 CEST (20:45-21:30 in China)

Fabio Scardigli (Milano Politecnico)

Planck Stars from a Scale-dependent Gravity theory

15:30-16:15 CEST (21:30-22:15 in China)

Mariam Bouhmadi-López (Basque U.)

Classical and Quantum cosmology of the very late Universe

16:15-17:00 CEST (22:15-23:00 in China)

Robert Brandenberger (McGill)

Emergent Metric Space-Time from Matrix Theory

17:00-17:45 CEST (23:00-23:45 in China)

Discussions

Friday 21th April

Session I Friday 21th April, Chair: Pisin Chen (National Taiwan U. and Stanford)

9:45-10:30 AM CEST (15:45-16:30 in China)

Irina Aref'eva (Steklov Math. Inst.)

Non-local Bose gas as a microscopic origin of the entropy of Schwarzschild black holes

10:30-11:15 AM CEST (16:30-17:15 in China)

Enrico Pajer (Cambridge U., DAMTP)

Recent progress on the cosmological bootstrap

11:15 AM-12:00 PM CEST (17:15-18:00 in China)

Manuel Asorey (Zaragoza Univ.)

Trace anomaly and induced action for a metric-scalar background

12:00-12:45 PM CEST (18:00-18:45 in China)

Discussions

Session II Friday 21th April, Chair: Irina Aref'eva (Steklov Math. Inst.)

14:00-14:45 CEST (20:00-20:45 in China)

Alexei A. Starobinsky (Landau Inst.)

What preceded quasi-de-Sitter (inflationary) stage in the early Universe?

14:45-15:30 CEST (20:45-21:30 in China)

Alberto Salvio (Tor Vergata U.)

Metric-Affine Effective Field Theory, Inflation and Reheating

15:30-16:15 CEST (21:30-22:15 in China)

Latham Boyle (Perimeter Inst.)

What is the simplicity of the early universe trying to tell us?

16:15-17:00 CEST (22:15-23:00 in China)

John Donoghue (Massachusetts, Amherst)

Running couplings in higher derivative sigma models

17:00-17:45 CEST (23:00-23:45 in China)

Discussions

17:45 CEST (23:45 in China)

Closing Remarks from Organisers