

## Program of GC2018 (ver. 180228)

[2/5 (Mon)] seminar day

10:30-11:00 coffee

11:00-12:00 free discussion

12:00-14:00 lunch

Chair: Shinji Mukohyama

14:00-15:00 (50min+10min) Valeri Frolov (Alberta) "Remarks on non-singular black holes"

15:00-15:30 coffee

15:30-16:30 free discussion

**[2/6 (Tue)] one-day workshop**

10:00-10:30 coffee

Chair: Andrei Barvinsky

10:30-11:10 (30min+10min) Andrew Tolley (Imperial) "Positivity Constraints in Effective Field Theories"

11:10-11:30 (15min+ 5min) Helvi Witek (Barcelona/King College London) "New prospects of Numerical Relativity beyond GR"

11:30-11:50 (15min+ 5min) Sampurnanand (Ahmadabad) "Effects of QCD equation of state on stochastic gravitational waves"

11:50-12:10 (15min+ 5min) Ricardo Ferreira (Barcelona) "Axion inflation: Naturally thermalized"

12:10-13:40 lunch

Chair: Sugumi Kanno

13:40-14:20 (30min+10min) Michael Volkov (LMTP, Tours) "Massive gravitons in arbitrary spacetimes"

14:20-14:40 (15min+ 5min) Vladimir Olegovich Solovev (IHEP) "Hamiltonian Bigravity and Cosmology"

14:40-15:00 (15min+ 5min) Yota Watanabe (IPMU) "Stable cosmology in chameleon bigravity"

15:00-15:30 coffee

Chair: Christophe Ringeval

15:30-15:50 (15min+ 5min) Michele Oliosi (YITP) "Minimal theory of quasilaton massive gravity"

15:50-16:10 (15min+ 5min) Daniele Vernieri (CENTRA) "Anisotropic interior solutions in Horava gravity and Einstein-aether theory"

16:10-16:30 (15min+ 5min) Sung-Won Kim (Ewha Womans U) "Cosmological model with wormhole and cosmological horizons"

16:30-17:10 coffee

Chair: Hayato Motohashi

17:10-17:30 (15min+ 5min) Ryuichi Fujita (YITP) "Gravitational waves from a spinning particle orbiting a Kerr black hole"

17:30-17:50 (15min+ 5min) Li Kaye Jiale (Chinese U, Hong Kong) "Spin curvature coupling in strong gravity using millisecond pulsar around a massive black hole"

17:50-18:10 (15min+ 5min) Ka-Wai Chung (Chinese U, Hong Kong) "Constrain Lorentz Violations of Gravitational Waves with Lensing and Super Massive Black Hole Ringdown"

**[2/7 (Wed)] YITP colloquium day**

10:30-11:00 coffee

11:00-12:00 free discussion

12:00-14:00 lunch

14:00-15:00 free discussion

15:00-15:30 coffee

Chair: Atsushi Taruya

15:30-16:30 YITP colloquium by Francois Bouchet (IAP) “Cosmology with the Cosmic Microwave Background Light: then and now”

(co-organized by YITP and the International Research Unit of Advanced Future Studies)

**[2/8 (Thu)] seminar day**

10:30-11:00 coffee

Chair: Sami Mohammad

11:00-12:00 (50min+10min) Andrew Tolley (Imperial) "Positivity Constraints for General Spin: Transversity Formalism"

12:00-14:00 lunch

14:00-15:00 free discussion

15:00-15:30 coffee

Chair: Remya Nair

15:30-15:50 (15min+ 5min) Otto Akseli Hannuksela (Chinese U, Hong Kong) "Discovering binary environments with gravitational waves"

15:50-16:10 (15min+ 5min) Kwun Hang Lai (Chinese U, Hong Kong) "Constraining Black Hole Horizon Effect in LIGO"

**[2/9 (Fri)] one-day workshop + party**

10:00-10:30 coffee

Chair: Jinn-Ouk Gong

10:30-11:10 (30min+10min) Andrei Barvinsky (Lebedev Inst.) "Darkness without dark matter and energy -- generalized unimodular gravity"

11:10-11:30 (15min+ 5min) Jan Henryk Kwapisz (Warsaw) "Conformal Standard Model and Inflation"

11:30-11:50 (15min+ 5min) Lorenzo Bordin (SISSA) "Robustness of primordial tensor mode predictions"

11:50-12:10 (15min+ 5min) Junsei Tokuda (Kyoto) "Theoretical Consistency of Stochastic Approach"

12:10-13:40 lunch

Chair: Antonio De Felice

13:40-14:20 (30min+10min) Sami Mohammad (Jamia Millia Islamia) "Quintessential inflation and relic gravity waves"

14:20-14:40 (15min+ 5min) Noemi Frusciante (Lisboa) "Exploring Large Scale Structure observables with viable dark energy and modified gravity models"

14:40-15:00 (15min+ 5min) Swagat Saurav Mishra (Pune) "New scalar field models of Ultra-light Dark Matter and tracker Dark Energy based on the  $\alpha$ -attractors"

15:00-15:30 coffee

Chair: Marcus Christian Werner

15:30-15:50 (15min+ 5min) Hayato Motohashi (YITP) "Constructing ghost-free degenerate theories with higher derivatives"

15:50-16:10 (15min+ 5min) Yuki Sakakihara (Osaka City) "On fermionic ghosts and the removal from scalar-fermion systems"

16:10-16:50 coffee

Chair: Shuntaro Mizuno

16:50-17:10 (15min+ 5min) Toshiya Namikawa (NTU) "Delensing cosmic microwave background polarization for ongoing and future experiments"

17:10-17:30 (15min+ 5min) Shohei Saga (YITP) "New constraints on small-scale primordial magnetic fields from Magnetic Reheating"

17:30-18:10 (30min+10min) Sachiko Kuroyanagi (Nagoya) "Probing the Universe through the Stochastic Gravitational Wave Background"

19:00- party @ the salon of the Yukawa Hall

**[2/12 (Mon)] substitute national holiday**

10:30-11:00 coffee

15:00-15:30 coffee

**[2/13 (Tue)] one-day workshop**

10:00-10:30 coffee

Chair: Andrei Frolov

10:30-11:10 (30min+10min) Christophe Ringeval (UCLouvain) "New insights on the cosmic strings stochastic gravitational wave background"

11:10-11:30 (15min+ 5min) Guillem Domenech (Heidelberg) "2nd order gauge invariant tensor modes in cosmology: a Hamiltonian approach"

11:30-11:50 (15min+ 5min) Ippei Obata (Kyoto) "Primordial GWs sourced by gauge field"

11:50-12:10 (15min+ 5min) Asieh Karami Majoomerd (IPM) "Effective field theory of anisotropic inflation"

12:10-13:40 lunch

Chair: Tomohiro Fujita

13:40-14:20 (30min+10min) Sebastien Renaux-Petel (IAP) "The Geometrical Destabilization of Inflation"

14:20-14:40 (15min+ 5min) Stanislav Rusak (Stockholm) "Non-minimally coupled inflaton and EW vacuum stability"

14:40-15:00 (15min+ 5min) Hector Ramirez (Valencia) "Generalized slow-roll approach to Horndeski Inflation"

15:00-15:30 coffee

Chair: Tomohiro Harada

15:30-16:10 (30min+10min) Andrei Frolov (SFU) "Unscreening scalarons with a black hole"

16:10-16:30 (15min+ 5min) Ilia Musco (Observatoire de Paris) "Primordial black hole formation: the morphology of cosmological perturbations"

16:30-16:50 (15min+ 5min) Encieh Erfani (IASBS) "Primordial Black Holes"

16:50-17:10 coffee

Chair: Michael Volkov

17:10-17:30 (15min+ 5min) Katsuki Aoki (Waseda) "Massive graviton geons: Self-gravitating massive gravitational waves"

17:30-17:50 (15min+ 5min) Ahmet Emir Gumrukcuoglu (Portsmouth) "Horava gravity: current constraints and concerns"

17:50-18:10 (15min+ 5min) Georgios Papadomanolakis (Leiden) "The stability conditions of modified gravity models and their applications"

18:10-18:30 (15min+ 5min) Taishi Katsuragawa (Central China Normal U) "Study on Chameleonic Dark Matter in  $F(R)$  Gravity"

**[2/14 (Wed)] seminar day**

10:30-11:00 coffee

Chair: Valeri Frolov

11:00-12:00 (50min+10min) Michael Volkov (LMTP, Tours) "Weyl metrics and wormholes"

12:00-14:00 lunch

14:00-15:00 free discussion

15:00-15:30 coffee

Chair: Katsuki Aoki

15:30-15:50 (15min+ 5min) Purnendu Karmakar (Padova) "Cosmic structures and gravitational waves in ghost-free scalar-tensor theories of gravity"

15:50-16:10 (15min+ 5min) Stefano Lucat (Utrecht) "Weyl symmetry in Einstein Cartan gravity"

**[2/15 (Thu)] seminar day**

10:30-11:00 coffee

Chair: Ryo Namba

11:00-12:00 (50min+10min) Christophe Ringeval (UCLouvain) "Gaining information about inflation via the reheating era"

12:00-14:00 lunch

14:00-15:00 free discussion

15:00-15:30 coffee

Chair: Ilija Musco

15:30-15:50 (15min+ 5min) Tomohiro Harada (Rikkyo) "Primordial black holes formed in the matter-dominated era"

15:50-16:10 (15min+ 5min) Cornelius Rampf (Heidelberg) "Shell-crossing in cosmological fluid flow"

**[2/16 (Fri)] one-day workshop + party**

10:00-10:30 coffee break

Chair: Antonio De Felice

10:30-11:10 (30min+10min) Mark Trodden (U Penn) "Extending the Classical Double Copy"

11:10-11:50 (30min+10min) Sugumi Kanno (Basque Country) "Decoherence of Bubble Universes"

11:50-12:10 (15min+ 5min) Francesco Nitti (APC) "Holographic Self-Tuning of the Cosmological Constant"

12:10-13:40 lunch

Chair: Tetsuya Shiromizu

13:40-14:20 (30min+10min) Valeri Frolov (Alberta) "Principal Killing strings"

14:20-14:40 (15min+ 5min) Masashi Kimura (Lisbon) "Mass ladder operators"

14:40-15:00 (15min+ 5min) Tsuyoshi Houri (Kyoto) "Hidden conformal symmetries of spacetime and higher-order ladder operators for the Klein-Gordon equation"

15:00-15:30 coffee break

Chair: Teruaki Suyama

15:30-15:50 (15min+ 5min) Chulmoon Yoo (Nagoya) "PBH abundance from the random Gaussian curvature perturbation and a local density threshold"

15:50-16:10 (15min+ 5min) Christian Fidler (RWTH Aachen) "Relativistic Interpretation of Newtonian Simulations"

16:10-16:30 (15min+ 5min) Massimo Pietroni (Parma/INFN) "A Robust BAO extractor: from theory to data"

16:30-16:50 break

Chair: Guillem Domenech

16:50-17:10 (15min+ 5min) Samuel Passaglia (Chicago) "Bispectrum in the Unified EFT of Inflation beyond Slow-Roll"

17:10-17:30 (15min+ 5min) Ryo Namba (McGill) "Stabilities of vector fields during inflationary epochs"

17:30-18:10 (30min+10min) Hassan Firouzjahi (IPM) "Primordial anisotropies from defects during inflation"

19:00- party @ the cafeteria in the north campus

[2/19 (Mon) - 2/23 (Fri)] YKIS2018a

**[2/26 (Mon)] seminar day**

10:30-11:00 coffee

Chair: Robert Mann

11:00-12:00 (50min+10min) Robert Brandenberger (McGill) "Symmetries of String Theory and Early Universe Cosmology"

12:00-14:00 lunch

Chair: Kurt Hinterbichler

14:00-15:00 (50min+10min) Mark Trodden (U Penn) "Finding structure in the dark: Coupled Dark Energy Models and the Mildly Nonlinear Regime"

15:00-15:30 coffee

Chair: Yuki Sakakihara

15:30-15:50 (15min+ 5min) Tomislav Prokopec (Utrecht) "Conformal symmetry and cosmology"

15:50-16:10 (15min+ 5min) Yun-Long Zhang (APCTP) "Holographic Screens in Flat Spacetime"

**[2/27 (Tue)] one-day workshop**

10:00-10:30 coffee

Chair: Cedric Deffayet

10:30-11:10 (30min+10min) Ruth Gregory (Durham) "Black holes and slow roll scalars"

11:10-11:50 (30min+10min) Robert Mann (Waterloo) "Entanglement Harvesting Near Black Holes"

11:50-12:10 (15min+ 5min) Masato Minamitsuji (Lisbon) "Compact objects in the generalized Proca theory"

12:10-13:40 lunch

Chair: Viatcheslav Mukhanov

13:40-14:20 (30min+10min) David Wands (ICG, Portsmouth) "Seeing stochastic inflation"

14:20-15:00 (30min+10min) Yuko Urakawa (Nagoya) "Exploring string axiverse from gravitational wave background"

15:00-15:30 coffee

Chair: Cyril Pitrou

15:30-16:10 (30min+10min) Ruth Durrer (Geneva) "Vorticity from Large Scale Structure"

16:10-16:50 (30min+10min) Kazuya Koyama (ICG, Portsmouth) "General relativistic weak-field limit and Newtonian N-body simulations"

16:50-17:10 coffee

Chair: Remya Nair

17:10-17:50 (30min+10min) Amanda Weltman (UCT) "Probing Fundamental Physics with the Radio Sky"

17:50-18:10 (15min+ 5min) Marcus Christian Werner (YITP) "Constructive gravity: a new approach to modified gravity theories"

18:10-18:30 (15min+ 5min) Hideki Asada (Hirosaki) "Revisiting the gravitational lensing with Gauss-Bonnet theorem"

**[2/28 (Wed)] seminar day**

10:30-11:00 coffee

Chair: Robert Brandenberger

11:00-12:00 (50min+10min) Viatcheslav Mukhanov (LMU, Munich) "Singularities"

12:00-14:00 lunch

Chair: Elias Kiritsis

14:00-15:00 (50min+10min) Cesar Gomez (Madrid) "Classicalization and IR physics"

15:00-15:30 coffee

Chair: Shuntaro Mizuno

15:30-15:50 (15min+ 5min) Grant James Mathews (Notre Dame) "Inflation with Superstrings"

15:50-16:10 (15min+ 5min) Yuxuan Peng (ITP, CAS) "Some applications of massive gravity in gauge/gravity duality"

**[3/1 (Thu)] seminar day**

10:30-11:00 coffee

Chair: Rachel Rosen

11:00-12:00 (50min+10min) Cedric Deffayet (IAP) "Massive and partially massless graviton in curved space-times"

12:00-14:00 lunch

Chair: Emilio Elizalde

14:00-15:00 (50min+10min) Andrei Barvinsky (Lebedev Inst.) "Renormalization of Horava gravity"

15:00-15:30 coffee

Chair: Thomas Sotiriou

15:30-15:50 (15min+ 5min) Laura Bernard (CENTRA) "Dynamics of compact binary systems in scalar-tensor theories at the third post-Newtonian order"

15:50-16:10 (15min+ 5min) Sebastian Bahamonde (University College London) "Nonlocal teleparallel cosmology"

16:10-16:30 (15min+ 5min) Konstantinos Dialektopoulos (Naples) "Constraining Non-local teleparallel cosmology using Noether Symmetries"

**[3/2 (Fri)] one-day workshop + party**

10:00-10:30 coffee

Chair: Amanda Weltman

10:30-11:10 (30min+10min) Nicolas Yunes (Montana State) "What can we learn about theoretical physics with future gravitational wave detectors?"

11:10-11:50 (30min+10min) Thomas Sotiriou (Nottingham) "Strong gravity as a probe for fundamental physics"

11:50-12:10 (15min+ 5min) Marco Crisostomi (Saclay/Orsay) "Higher Order Scalar-Tensor Theories"

12:10-14:00 lunch

Chair: Michael Volkov

14:00-14:40 (30min+10min) Rachel Rosen (Columbia) "Massive Spin-2s and Time-Dependent Black Holes"

14:40-15:00 (15min+ 5min) George Zahariade (Arizona State) "The Hamiltonian interpretation of vacuum energy sequestering"

15:00-15:30 coffee

Chair: Antonio De Felice

15:30-16:10 (30min+10min) Kurt Hinterbichler (Case Western) "Model Independent Constraints on Massive Gravity from Eikonal Scattering"

16:10-16:30 (15min+ 5min) Takashi Hiramatsu (Rikkyo) "Dynamical screening of scalar waves in cubic Galileon model"

16:30-16:50 (15min+ 5min) Qiuhe Peng (Nanjing) "The Evidence of Magnetic Monopoles by Astronomical Observation and Its Important Implication"

16:50-17:10 coffee

Chair: Kei-ichi Maeda

17:10-17:30 (15min+ 5min) Kunihito Uzawa (Kwansei Gakuin) "Ekpyrotic scenario in string theory"

17:30-17:50 (15min+ 5min) Yu Tian (UCAS) "From Laminar Flow to Wave Turbulence in Holographic Superfluid"

17:50-18:30 (30min+10min) Emilio Elizalde (ICE-CSIC & IEEC, Barcelona) "Zeta Functions and Cosmological Applications"

19:00- party @ Camphora