

Program

Monday 31 August

Morning Session Chair: Glenn Starkman

- 09:00-09:20 Registration
- 09:20-10:00 Nicola Bartolo “Probing the nature of inflation via CMB and GWs”
- 10:00-11:15 Mattia Dubbini “Inflationary magnetogenesis with massive vector fields and Schwinger effect”
- Nino Kochiashvili “Some Problems Between the Classical Big Bang Theory and Observational Data”
- Antonino Marino “Stealth fields in cosmology: primordial magnetogenesis and the Theta-shift redefinition method”
- 11:15-11:45 Coffee Break
- 11:45-12:25 Fabio Finelli “The H0 world cup. A comprehensive competition between proposed Hubble tension solutions”
- 12:25-12:50 Tommaso Mengoni “Scalar perturbations from a two-field unified warm-inflationary cosmological model”
- 12:50-14:20 Lunch

Afternoon Session Chair: Daniela Paoletti

- 14:20-15:00 Massimiliano Lattanzi “From CMB data to fundamental physics: data-analysis challenges for next-generation CMB experiments”
- 15:00-16:15 Chiara Animali “A Forest of Primordial Black Holes: Type I and Type II Formation in Stochastic Inflation”
- Matteo Galaverni “Redshift-dependent cosmic birefringence from pseudoscalar fields”
- Avinash Anand “Next-generation CMB polarization data reduction: Scalable map-making and $1/f$ noise mitigation with BrahMap”
- 16:15-16:45 Coffee Break
- 16:45-17:25 Carlo Baccigalupi “Computational Resources and Simulation Realism in the Era of Cosmological Probe Combination”
- 17:25-17:50 Yang Liu “AliCPT First-Season Data Analysis and Preliminary Results”
- 17:50-18:50 Discussion Session “Next challenge for the primordial universe: What do you want, and how do you plan to do it?”

18:50-19:30 Welcome Aperitif

Tuesday 1 September

Morning Session Chair: Stefano Anselmi

09:20-09:45 Glenn Starkman “The Universe is not statistically isotropic”

09:45-11:15 Deyan Mihaylov “Computing the information content of the observable Universe”

Tatsuaki Wada “Reframing information geometry via symmetric teleparallel gravity”

Eugene Oks “Dark Hydrogenic Atoms and Ions as Baryonic Dark Matter and their Role in Structure Formation”

11:15-11:45 Coffee Break

11:45-12:25 Angelo Caravano “Inflation on the lattice”

12:25-12:50 Andrea Iacobellis “Are Oscillons in Non-Minimally Coupled Theories Frame-Covariant?”

12:50-23:00 Lunch + Social Activity + Social Dinner (see website for the programs)

Wednesday 2 September

Morning Session Chair: Bin Hu

09:20-10:00 Niall Jeffrey “Decoding dark energy: simulation-based inference with galaxy surveys”

10:00-11:15 Stefano Anselmi “The challenges of using Baryon Acoustic Oscillations distances for cosmology”

Francesca Passalacqua “Addressing Systematics in Large Galaxy Surveys: a new approach to exploit data and simulations”

Federico De Luca “Improving H_0 constraints from joint Planck and XMM-Newton observations of galaxy clusters”

11:15-11:45 Coffee Break

11:45-12:25 Anik Halder “Scalable inference of redshifts and galaxy properties under the pop-cosmos generative population model”

12:25-12:50 Anna Chiara Alfano “Mapping the redshift drift at various redshifts through cosmography”

12:50-15:20 Lunch + Guided tour of Jesi (Start at 13:30 from Piazza Colocci)

Afternoon Session Chair: Gianluca Castignani

15:20-16:00 Giuseppe Puglisi “Galactic Foreground emission with Neural networks”

16:00-16:25	Tornatore Felix “The ADELINe suite: simulations of galaxy clusters in non-standard dark energy models”
16:25-16:55	Coffee Break
16:55-17:25	Nathaniel Starkman “Mapping Gravity with Extragalactic Streams”
17:25-18:25	Discussion Session “Machine Learning, Neural Networks, and AI: powerful tools, but can we trust them?”

21:00-22:00	Nathaniel Starkman - Public Seminar (ENG): “Following the Stars: How Stellar Streams Reveal Dark Matter”

Thursday 3 September

Morning Session Chair: Amirmohammad Chegeni

09:20-10:00	Angelo Ricciardone “Cosmology with Gravitational Waves - Current Status and Future Prospects”
10:00-11:15	Serena Gambino “Charged accretion Tori around Schwarzschild black hole: self-generated electromagnetic fields and their effect on disc structure”
	Gabriele Bianchini “Quasinormal Modes as Spectral Probes of Spacetime Geometry: From Plebański-Demiański to Black Hole Mimickers”
	Nino Kochiashvili “How the Big Collaboration is Trying to Find Optical Counterparts of GWs”
11:15-11:45	Coffee Break
11:45-12:25	Agata Trovato “Machine learning methods in gravitational waves searches”
12:25-12:50	Francesco Sorrenti “Anisotropic expansion in the Laniakea region from supernovae luminosity-distance kinematics”
12:50-14:20	Lunch

Afternoon Session Chair: Angelo Ricciardone

14:20-15:00	Bin Hu “The mass model and LoS effects on Time-delay Cosmography”
15:00-16:15	Martin Gerini “Scalable early warning for BNS mergers in next-generation ground-based detectors using SBI”
	Amirmohammad Chegeni “A Spline Persistence Model for Euclid NISP H2RG Detectors”
	Hong Li “AliCPT-1 in the Northern Sky: Progress Review and Future plan”
16:15-16:45	Coffee Break
16:45-17:25	Enrico Barausse “Gravitational waves: where data science meets physics”

- 17:25-17:50 Huanyuan Shan “AI-Driven Cosmology in the CSST Era”
- 17:50-18:50 Discussion Session “No Collaboration Stands Alone: Collaboration among collaborations to face the challenges of future data.”
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- 21:00-22:00 Gianluca Castignani - Public Seminar (ITA): “Dall’Universo lontano all’energia oscura: l’eredità di Hubble e le nuove frontiere con Euclid”

Friday 4 September

Morning Session Chair: Alessandro Renzi

- 09:20-10:00 Alessandro Romeo “Preparing Cosmological Simulations for heterogeneous European clusters: CINECA's Contributions to OpenGadget within the SPACE-CoE”
- 10:00-10:50 Andrea Martini “FAST Computing”
- Stefano Penna “Thales Alenia Space Italia”
- 10:50-11:20 Coffee Break
- 11:20-12:00 Gianluigi Rozza “Accelerating Innovation — Why the University–Industry Bridge Needs Scientists Who Cross It”
- 12:00-13:00 Discussion Session “Academia Meets Industry: Turning Research into Real-World Impact”

END OF CONFERENCE