

13th Young Researcher Meeting Program

24 September 2024

Aula A

09:00 - 10:00	Registration desk and poster placement
10:00 - 10:20	Opening Remarks
10:20 - 11:00	Invited Talk: Prof. Massimo Palma
11:00 - 11:30	Coffee break
SESSION 1 - Matter Physics	
11:30 - 11:50	Ludovico Giuseppe Barbata <i>Luminescent MOF based sensor for Hg²⁺ detection in aqueous solution</i>
11:50 - 12:10	Marco Reale <i>Nanographene-polystyrene microresonators as unclonable microlabels for anti-counterfeiting applications</i>
12:10 - 12:30	Giuseppe De Luca <i>Phasor-FLIM Analysis of Thioflavin T Fluorescence Lifetime to Explore Amyloid β-Structures</i>
12:30 - 12:50	Giuseppe Ficarra <i>Exploiting the porous nature of MOF-808 to embed Rhodamine B molecules resulting in a new dual emitting nano-system</i>
12:50 - 14:00	Lunch break
SESSION 2 - Matter Physics	
14:00 - 14:20	Maria Jose Lo Faro <i>Light managing in fractal arrays of silicon nanowires for innovative applications</i>
14:20 - 14:40	Antonino Madonia <i>The Effect of Thermal Treatments on the Photoluminescence of Monolayer MoS₂</i>
14:40 - 15:00	Francesca Migliore <i>Effects of high temperature thermal treatments on substrates and epitaxial layers of 4H-SiC</i>
15:00 - 15:20	Ashim Pramanik <i>Colour Tunable Compact Random Laser for generation of Unclonable Security Tags</i>
16:00 - 16:20	Coffee break
15:20 - 15:40	Pietro Castronovo <i>Enabling Collective Behaviour of Metal Halide Perovskite Nanocubes via Hierarchical Assembly into Superstructures</i>
15:40 - 16:00	Laureline Roffi <i>Impact of pH and colloidal dispersion on the photoluminescence properties of Carbon nanodots</i>
16:20 - 16:40	Riccardo Rubino <i>Unveiling the Excited-State Dynamics and Coherent Vibrational Oscillations in Pyrene-Based Nanographene</i>
16:40 - 17:00	Caterina Tortorici <i>Exploring Photoluminescence Properties of MOF Uio-66 as a Function of Temperature: A Spectroscopic Investigation</i>
17:00 - 18:00	Poster&Wine session

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SESSION 1 - Particle and Nuclear Physics	
9:00 - 9:20	Duillo De Santis <i>Nonequilibrium physics in the sine-Gordon model: from high-Tc cuprates to ultracold atoms</i>
9:20 - 9:40	Alessio Ludovico De Santis <i>Cosmic Fireworks in Dark matter experiments - Supernova Neutrinos with COSINUS</i>
9:40 - 10:00	Giovanni Di Fresco <i>Measurement-Induced Phase Transitions Explored through Quantum Critical Sensing</i>
10:00 - 10:20	Ricardo Rosado <i>An Implicit Regularization Approach to chiral models: NLO QCD corrections to Z0 and (pseudo)scalar decays</i>
10:20 - 10:40	Alice Barbon <i>First results of a test of a Silicon Carbide detector with a neutron beam in the framework of the SAMOTHRACE project</i>
10:40 - 11:00	Coffee break
11:00 - 11:40	Invited Talk: Prof. Fabrizio Messina
SESSION 2 - Theoretical Physics	
11:40 - 12:00	Nicola Bortolotti <i>Probing space-time non-commutativity through Pauli exclusion principle tests</i>
12:00 - 12:20	Matteo Bruno <i>Quantum Gravity and TQFTs: A New Chapter in a Troubled Love Story</i>
12:20-12:40	Amedeo Maria Favitta <i>Non-equilibrium QFT of dark matter axion-like particles and condensates in three scenarios</i>
12:40 - 14:00	Lunch break
14:00 - 14:20	Diana Chisholm <i>Non-Gaussian states in levitated nanoparticles to witness gravity-induced entanglement</i>
14:20 - 14:40	Bruno Micciola <i>Entanglement in QED scattering processes</i>
14:40 - 15:00	Sebastiano Segreto <i>Mixmaster Universe in a 2D non-commutative GUP framework</i>

SESSION 3 - Biophysics	
15:00 - 15:20	Klotilda Nikaj <i>Interdisciplinary Insights into Structural Target Control: Complex Social Networks and Neuronal Dynamics</i>
15:20 - 15:40	Georgia Puleo <i>Biophysical Study of Nitrogen-Doped Titanium Dioxide and Gold Nanorods on Bacteria-Like Model Targets</i>
15:40 - 16:00	Coffee break
SESSION 4 - Astrophysics	
16:00 - 16:20	Mattia Claudio D'Arpa <i>Photo-evaporating puzzle: exploring the enigmatic nature of TOI-5398 b atmospheric signal</i>
16:20 - 16:40	Riccardo Spinelli <i>The time evolution of the ultraviolet habitable zone of exoplanets</i>
16:40 - 17:00	Federica Uzzo <i>Star-Planet Interaction: Modeling of WASP-12</i>
20:00	Social dinner

26 September 2024

Guided tour of Palermo	
9:00	Meeting point at <i>via Archirafi, 36</i>
9:30	Start of the tour: <i>Piazza Bellini, Discesa dei Giudici</i>
13:00 - 14:30	Lunch break
Guided tour of the Astronomical Observatory of Palermo - INAF	
14:30 - 15:00	Check-in at INAF: <i>Piazza del Parlamento, 1</i>
15:00 - 17:00	Guided tour of the museum and overview of the research activities
17:00 - 18:00	Return to <i>via Archirafi, 36</i>

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9:30 - 10:30	Lectio Magistralis: Prof. Michele Maggiore
SESSION 1 - Astrophysics	
10:30 - 10:50	Alessandro Novelli <i>Current challenges in the study of the early universe using the CMB: a novel approach for the cross-calibration of polarimeters</i>
10:50 - 11:20	Coffee break
11:20 - 11:40	Gabriele Cozzo <i>Where Atropos is hiding?</i>
11:40 - 12:00	Claudia Di Maio <i>SpotCCF: a stellar photosphere modelling based on the cross-correlation function technique</i>
12:00 - 12:20	Victor Almendros-Abad <i>The formation of brown dwarfs in the most extreme environments of the Milky Way: the case of Westerlund 1</i>
12:20 - 12:40	Silvia Micheli <i>Simulation and analysis of systematic effects for the LiteBIRD space mission</i>
12:40 - 14:10	Lunch break
SESSION 2 - Astrophysics	
14:10 - 14:30	Raphaël Wicker <i>First systematic reconstruction of cluster temperature maps combining millimeter and X-ray data</i>
14:30 - 14:50	Alfredo Biagini <i>A reanalysis of the LHS 1140 b atmosphere observed with the Hubble Space Telescope</i>
14:50 - 15:10	Benedetta Mestichelli <i>Binary black hole mergers from Population III star clusters</i>
15:10 - 15:30	Alan Sunny <i>A gamma ray perspective on the galactic PeVatrons in the era of CTAO and ASTRI Mini-Array</i>
15:30 - 16:00	Coffee break
16:00 - 16:30	Best Poster Award ceremony
16:30 - 17:00	Closing Remarks

Posters	
Aishwarya Paliwal	<i>In-depth analysis of the ICM and dynamical state of the LPSZ observed galaxy cluster ACT-CL J0240.0+0116 using multi-band observations</i>
Beatrice Gorga	<i>Analysis of Dione's surface composition using VIS-IR spectral modeling applied to Cassini-VIMS dataset</i>
Sougata Sarkar	<i>Constraining different DM Halo Profiles from HI observation of GARCLA galaxies</i>