

IAU FM9: Measures of Luminous and Dark Matter in Galaxies Across Time

Tuesday 13 August

Session 1: Observational constraints on dark matter

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| 10:30 - 10:55 | Sedona Price | Invited talk: Observational constraints on dark matter in galaxies over the last 10 billion years | in-person |
| 10:55 - 11:10 | Caroline Foster | The dynamical and morphological transformation of galaxies through cosmic time | in-person |
| 11:10 - 11:25 | Lai Yee Lilian Lee | The CRISTAL survey: Resolving kinematics of typical main-sequence star-forming galaxies at $4 < z < 6$ | in-person |
| 11:25 - 11:40 | Teymoor Saifollahi | Weighing dark matter in dwarf galaxies in the Perseus galaxy cluster | in-person |
| 11:40 - 11:55 | Luísa Buzzo | A comprehensive view of the luminous and dark matter content of ultra-diffuse galaxies | in-person |
| 11:55 - 11:58 | E. d.T. | Dark matter halos and scaling relations of extremely massive spiral galaxies | in-person |
| 11:58 - 12:01 | Michael Fall | Dynamical evidence that galaxies of different morphologies occupy dark matter halos of different masses | in-person |

Session 2: Observational constraints on dark matter

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|---------------|-----------------|---|-----------|
| 13:30-13:55 | Kyle Oman | Invited talk: The many ways that dwarf galaxy rotation curves can fail as mass tracers | in-person |
| 13:55 - 14:10 | Catherine Cerny | Probing Inner Dark Matter Density Profiles with MUSE Kinematics and Strong Lensing | in-person |
| 14:10 - 14:25 | Surhud More | Linking galaxies with dark matter halos using weak gravitational lensing | in-person |
| 14:25 - 14:40 | Carlos Carneiro | Joint modelling of strong gravitational lensing and stellar dynamics. | in-person |
| 14:40 - 14:55 | Jessica Doppel | Imposters among us: globular cluster kinematics and the halo mass of ultra-diffuse galaxies in clusters | in-person |
| 14:55 - 14:58 | Suchira Sarkar | Massive disc galaxies with high surface brightness plus low surface brightness stellar disks, hosted by massive dark matter halo - a TNG50 simulation study | online |
| 14:58 - 15:01 | Richard Lane | Isolated elliptical galaxies: Dark Matter, MOND, or something else? | in-person |

Session 3: LCDM challenges and simulations

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| 15:30 - 15:55 | Federico Lelli | Invited talk: The dynamical scaling laws of rotation-supported galaxies | in-person |
| 15:55 - 16:10 | Pavel Mancera Piña | An ultra-deep and ultra-sharp view on gas-rich ultra-diffuse galaxies: a population defying CDM | in-person |
| 16:10 - 16:25 | Zahra Basti | Calibrating Mass Modeling Methods with Numerical Simulations of Galaxies | in-person |
| 16:25 - 16:40 | Nondh Panithanpaisal | Populations of Subhalos Beyond the Virial Radius: Splashback vs. Field Subhalos in FIRE | in-person |
| 16:40 - 16:55 | Aaron Ludlow | The impact of spurious collisional heating on the spatial distribution and kinematics of stellar and dark matter particles in simulated galaxies | in-person |
| 16:55 - 16:58 | Ji Hoon Kim | The Formation of Late-type Galaxies: Nature versus Nurture | in-person |
| 16:58 - 17:01 | Nikhil Arora | Quantifying the inner halo response to active galactic nuclei feedback in galaxies | in-person |

Thursday 15 August

Session 4: Constraining dark matter particle candidates

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| 10:30 - 10:55 | Viviana Gammaldi | Invited talk: Dark matter searches in dwarf irregular galaxies with gamma-ray observatories. | online |
| 10:55 - 11:10 | Carlo Nipoti | Dwarf spheroidal galaxies as dark-matter laboratories | in-person |
| 11:10 - 11:25 | Nency Patel | Probing Dark Matter with Strong and Weak Gravitational Lensing Mass Models: A Case Study of Abell 2744 | in-person |
| 11:25 - 11:40 | Michael Sarkis | DarkMatters: the complete multi-wavelength WIMP emission simulator | in-person |
| 11:40 - 11:43 | Samuel Lange | A new Dark Matter detection? Testing lens model complexity in Strong Lensing | in-person |
| 11:43 - 11:46 | Oliver Newton | Constraints on the properties of ν MSM dark matter using the satellite galaxies of the Milky Way | in-person |
| 11:46 - 11:49 | Richard McDermid | The evolution of total mass density slopes, dark matter content, and orbital structure since $z=0.3$ from resolved integral field stellar kinematics from MAGPI | in-person |
| 11:49 - 11:52 | Famenontsoa Rakotondrainy | Comparative analysis of dark matter distribution in HI-rich galaxies | in-person |
| 11:52 - 11:55 | Nathan Deg | The Kinematic Scaling Relations of the WALLABY Pilot Galaxies | in-person |
| 11:55 - 11:58 | Mithi Alexa de los Reyes | Stellar Mass Calibrations in Low-Mass Galaxies | in-person |

Session 5: Alternatives to LCDM

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|---------------|---------------------|--|-----------|
| 13:30 - 13:55 | Giulia Despali | Invited talk : Galaxy formation in alternative dark matter scenarios | online |
| 13:55 - 14:10 | Azadeh Fattahi | Galactic halos in alternative dark matter models | in-person |
| 14:10 - 14:25 | Francesca Fragkoudi | Probing dark matter with bar dynamics | in-person |
| 14:25 - 14:40 | Przemek Mroz | Constraints on primordial black holes as constituents of dark matter based on over 20 years of OGLE observations of the Large Magellanic Cloud | in-person |
| 14:40 - 14:43 | Surajit Kalita | Fast radio bursts as a probe to constrain primordial mass black holes made of dark matter | in-person |
| 14:43 - 14:46 | Victor Robles | Assessing the effect of supernovae feedback at the center of dwarf halos of scalar field/fuzzy dark matter | in-person |
| 14:46 - 14:49 | Nilanjana Nandi | Dynamical lineage of HI-rich field ultra-diffuse galaxies | in-person |
| 14:49 - 14:52 | Роман Ткаченко | Constraints of the Dark Matter Concentration in the Solar Neighborhood Based on GAIA DR3 catalogue | in-person |
| 14:52 - 14:55 | Connor Bottrell | From optical imaging to dark matter halo masses with simulation-based inference models | in-person |

Session 6: Perspectives and new techniques

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|---------------|------------------|---|-----------|
| 15:30 - 15:55 | Francoise Combes | Invited talk: Alternatives to CDM, MOND or Axion-like particles | in-person |
| 15:55 - 16:10 | Florent Renaud | Probing dark matter (or its absence) with galaxy mergers | in-person |
| 16:10 - 16:25 | anupreeta more | Towards statistical constraints on mass distributions of galaxies/groups from strong lens samples | in-person |
| 16:25 - 16:40 | Jiani Chu | Galaxy stellar and total mass estimation using machine learning | in-person |
| 16:40 - 16:55 | Connor Stone | Caustics: a differentiable, GPU accelerated, gravitational lensing simulator | in-person |