



# MAP-Fis Essays Workshop

## Friday 31 May 2024

### MAP-Fis Essays Presentations: Session B - Relativity & Gravitation (I) (09:15 - 10:55)

time	[id] title	presenter
09:15	[55] Solving the Hubble tension with nonminimally coupled $f(R)$ theories of gravity	BARROSO VARELA, Miguel
09:40	[51] Non-linear Evolutions of Black Holes in Numerical Relativity	MOTA VALENTE FERREIRA, José Pedro
10:05	[53] Deep-Learning Classification and Parameter Inference of Rotational Core-Collapse Supernovae	NUNES, Solange
10:30	[54] Deep Learning for transient signals in gravitational-wave astronomy	FERNANDES, Tiago

### MAP-Fis Essays Presentations: Session A - Climate & Environment (11:10 - 12:25)

time	[id] title	presenter
11:10	[58] Dusty Atmospheric Rivers: relationship between intense transport of water vapour and aerosols in the Iberian Peninsula	LUÍS, Diogo
11:35	[59] Impactos das alterações climáticas na formação de Cold Air Pools na Região Demarcada do Douro	TEIXEIRA, Marta
12:00	[60] TO BE DETERMINED	CHIAHA, SHEDRACH

### MAP-Fis Essays Presentations: Session B: Relativity & Gravitation (II) (11:10 - 12:25)

time	[id] title	presenter
11:10	[52] Extreme mass ratio inspirals around non-Kerr compact objects	MARIANO, Manuel
11:35	[56] Accretion patterns from exotic compact objects	PASSOS, Pedro
12:00	[57] Machine learning anomaly detection techniques for the search of new signals at LHC with ATLAS experiment	BERTI, Annalisa

### MAP-Fis Essays Presentations: Session A: Material Physics & Condensed Matter I (14:00 - 16:05)

time	[id] title	presenter
14:00	[61] Emergence of novel properties at the interfaces in oxide heterostructures and superlattices	SILVA, Alexandre
14:25	[62] Naturally Layered Ruddlesden-Popper Ferroelectrics towards Energy Efficient Materials	CESÁRIO, António
14:50	[63] Biofunctional Cyclic Dipeptide Nanofibers for Energy Harvesting and Nonlinear Optical Conversion	SANTOS, Daniela
15:15	[64] Spatially and temporally modulated active patch for skin cancer treatment	BOGAS, Diana
15:40	[65] Remediação ambiental	BOANO, Paulo

**MAP-Fis Essays Presentations: Session B: High Energy Physics (14:00 - 16:05)**

time	[id] title	presenter
14:00	[67] Bootstrap and Holographic CFTs	SERRANO, Filipe
14:25	[69] A multi-point bootstrap approach to Quantum Field Theory	RODRIGUES, Ricardo
14:50	[70] Light and Ultralight Dark Matter: exploring novel synergies between particle physics, strong gravity and cosmology	OLIVEIRA, Vinícius
15:15	[68] Gravitational echoes from primordial phase transitions	FINETTI, Marco
15:40	[66] Coding the Cosmos, Searching for Superstrings	HEILEMANN, Ricarda

**MAP-Fis Essays Presentations: Session A: Material Physics & Condensed Matter I (16:20 - 18:00)**

time	[id] title	presenter
16:20	[71] Combined local probe technique and ab-initio calculation on layered Perovskites	SILVA DE SOUSA, Pedro Alexandre
16:45	[72] Understanding anomalies in liquid water with upconversion thermometry	FILHO, Ramon
17:10	[73] Advanced Photoelectrodes in Photoelectrochemical Cells for Solar Water Splitting and Green Hydrogen Generation	GONÇALVES, Sofia

**MAP-Fis Essays Presentations: Session B: Optics & Photonics (16:20 - 18:00)**

time	[id] title	presenter
16:20	[75] Insect-Brain Inspired Neuromorphic Nanophotonic Devices	AZEVEDO, João
16:45	[76] Hybrid optical fiber sensors interfaced with interfaced with micro/nano fabrication technologies: towards a multisensing platform	SANTOS, João
17:10	[77] Development of polarimetric remote sensing technique for road condition inquiry and fast probing	ROMANYSHYN, Nazar
17:35	[78] Versatile Neuromorphic Frameworks for Optical Computing	ROCHA, Vicente