



INSTITUTO DE FISICA DE PARTICULAS Y DEL COSMOS

UNIVERSIDAD COMPLUTENSE DE MADRID



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MADRID

IPARCOS WORKSHOP Madrid, 16-17 June 2022 Agenda

Thursday, 16 June

Venue: Room M2, Facultad Ciencias Físicas, UCM, Madrid

09:30 *Welcoming remarks.*
Fernando Arqueros.

Current activities of the Institute

10:00 *Stellar astrophysics and exoplanets.*
David Montes (SEEF).

10:20 *Activities of the High Energy Physics Group.*
Juan Abel Barrio (GAE).

11:00 Coffee break

11:30 *Activities of GUAIX.*
Jesús Gallego (GUAIX).

12:10 *Nuclear imaging and proton therapy*
Samuel España (GFN).

12:50 *Effective field theories and hadronic structures.*
Ignazio Scimemi (TEFM).

13:10 *Theoretical gravity and cosmology at IPARCOS.*
José A. Ruiz Cembranos (TEFM)

13:30 Lunch break



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IPARCOS Strategic program

15:00 *Strategic program and "high impact" activities on the MdM application.*
Armando Gil de Paz

SSG1 Session: Dark Matter and Dark Energy

15:30 *Indirect dark matter searches with gamma rays.*
Daniel Nieto

15:50 *Identifying the main drivers in the evolution of galaxies.*
Maritza A. Lara-López

16:10 *Neutrino nucleus interactions for neutrino oscillations.*
José Manuel Udías

16:30 Coffee Break

SSG2 Session: Gravitational-waves and multi-messenger astronomy

17:00 *Light ring images of thin accretion disk in regular compact objects.*
Mercè Guerrero

17:20 *Galaxy evolution and cosmology using gamma rays observed with Fermi-LAT.*
Alberto Domínguez

SSG3 Session: From high precision hadronic observables to new physics

17:40 *Atomic spectroscopy as dark sectors probe.*
Clara Peset

18:00 *Dispersion relations and QCD spectra.*
Jacobo Ruiz de Elvira

18:20 *Hadron structures through high energy physics in multiple dimensions.*
Alexey Vladimirov

18:40 **End of session**



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Friday, 17 June

Venue: Room M2, Facultad Ciencias Físicas, UCM, Madrid

TSG1 Session: Instrumentation development

- 09:30 *Nocturnal remote sensing: a bridge between astrophysics and the interdisciplinary world.*
Alejandro Sánchez de Miguel
- 09:45 *TARSIS, the new IPARCOS-led instrument for the Calar Alto 3.5m telescope.*
Armando Gil de Paz
- 10:00 *Nuclear instrumentation from spectroscopy to applications.* **Pablo Galve**
- 10:15 *CTA-GAE.* **Luis Ángel Tejedor**

TSG2 Session: Extreme computing

- 10:30 *From Science Operations to instrument and survey management: exploring ML/AI techniques.* **Francisco Montenegro**
- 10:45 *Data Harmonization for Robust and Generalizable Artificial Intelligence Models.* **Joaquín López Herráiz**
- 11:00 *Machine learning for very-high-energy gamma-ray astronomy.*
Daniel Nieto
- 11:15 *Faster than light: GPU and DL dose calculations for intrabeam.*
Paula Ibáñez
- 11:30 Coffee Break

New lines and activities. Brainstorming Session

- 12:15 *Participation of IPARCOS in the ET project.* **José Luis Blázquez**
- 12:30 *Participation of IPARCOS at EuCAPT.* **José A. Ruiz Cembranos**
- 12:45 *Participation of IPARCOS at EIC and CERN ptW/ptZ working group.*
Ignazio Scimemi
- 13:00 *IT common resources, computation.* **Daniel Nieto**
- 13:15 *Possible strategies for the 2022 MdM-CFP.*
Armando Gil de Paz & Fernando Arqueros