

Final report of the Open RIA Meeting “Iberian AtLAST days 2026”

4-5 June 2026 | Universidad Complutense de Madrid | Hybrid meeting

Iberian AtLAST Days 2026

Madrid, 4th-5th June, 2026

Salón de Grados
Facultad C.C. Físicas



UNIVERSIDAD
COMPLUTENSE
M A D R I D



**AtLAST, Consolidating plans for that Atacama
Large Aperture Sub-mm Telescope**



Funded by
the European Union

1. Introduction and objectives

The Iberian AtLAST days meeting brought together the Spanish and Portuguese (sub-)millimetre communities to foster scientific and technical synergies around the future Atacama Large Aperture Submillimeter Telescope (AtLAST) facility. The meeting was designed as an open forum to present the current developments of the AtLAST project, discuss its science drivers and technical requirements, and broaden the community of researchers and engineers engaged in AtLAST across Spain and Portugal.

The project presents AtLAST as a next-generation 50-m-class single-dish telescope for the Southern Hemisphere, dedicated to the (sub-)mm sky and designed around high sensitivity, an unprecedented field of view, and sustainable operation powered by renewable energy. The meeting therefore addressed both scientific priorities and implementation issues, including instrumentation, data processing, synergies with existing and forthcoming facilities, and sustainable infrastructure.

Main objectives:

- Present the AtLAST project, its current status, conceptual design and technical developments to the Iberian astronomy community.
- Identify scientific use cases in which Spain and Portugal can contribute to AtLAST, including Galactic science, galaxy evolution, cosmology, solar physics, time-domain science and astrochemistry.
- Foster collaborations between researchers, engineers, observatories and computing-resource providers connected to the RIA ecosystem and related international facilities.
- Discuss synergies with existing and future infrastructures, including IRAM, Yebes, SKAO, LSST/Rubin, CMB experiments and other radio/(sub-)mm facilities.
- Gather community input through discussion sessions and a user survey, which will support the definition of future AtLAST capabilities and participation routes.

2. SOC and LOC

Scientific Organizing Committee (SOC):

- Alicia Gómez - CAB
- Álvaro Hacar - U. Wien
- Ciro Pappalardo - IA, Lisbon
- Ciska Kemper - ICE-CSIC
- Evanthia Hatziminaoglou - IAC
- Fran Montenegro - IPARCOS-UCM (chair)
- Héctor Socas - EST
- Teresa Huertas - IAC
- Tony Mroczkowski - ICE-CSIC

Local Organizing Committee (LOC):

- María Cividanes - IPARCOS-UCM (co-chair)
- Ainhoa Sánchez Penim - IPARCOS-UCM
- Miriam Cortés Contreras - IPARCOS-UCM
- Cristina Catalán Torrecilla - IPARCOS-UCM
- Armando Gil de Paz - IPARCOS-UCM
- Fran Montenegro - IPARCOS-UCM (chair)

3. Organization and participants

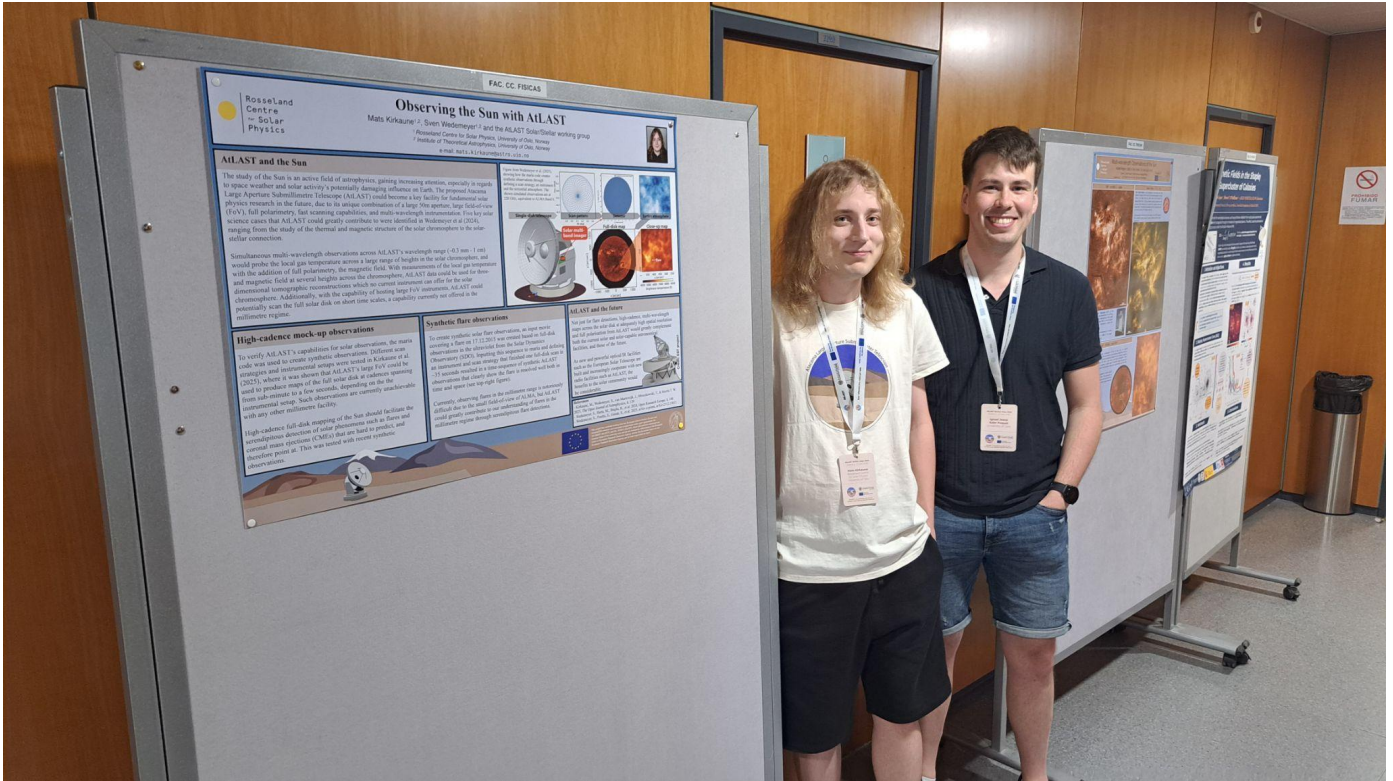
Item	Information
Type of event	Hybrid. In-person attendance was encouraged to improve collaboration opportunities, while a hybrid option was offered because physical space was limited.
Dates and times	4 June 2026, 09:00 to 5 June 2026, 16:35 (Europe/Madrid).
Venue	Facultad de Ciencias Físicas, Sala de grados, Universidad Complutense de Madrid, Plaza de Ciencias 1, Ciudad Universitaria, Madrid.
Main meeting rooms	Scientific sessions in Sala de grados; coffee breaks, poster sessions and lunch breaks in the student cafeteria, Floor -1, Facultad de Ciencias Físicas.
Visits	No site visit
Media announcement	The meeting was announced through the Indico event page, the AtLAST event/news page, RIA listings/news, the call for abstracts page, and external scientific-event listings such as the SEA-anuncios distribution list and 10times.
Chairpersons	Francisco Miguel Montenegro Montes and Gloria Cividanes.
Contact / support	fmontene@ucm.es ; gcividan@ucm.es

Participant statistics

Total number of participants (in person and online): 63 registered participants: 21 women (33%), 42 men (66%).

Meeting photos:







4. Specific contributions related to ICTSs/RIA

The meeting focused on AtLAST as a future major (sub-)mm facility and on its links with existing and planned RIA-related infrastructures and international observatories. Contributions covered science cases, enabling technologies, operations, computing and cross-facility synergies.

Time	Presentation	Presenter(s)	Type	Relevance to ICTSs/RIA
04/06 09:30	AtLAST: Shaping together the next generation (sub)mm observatory	Evanthia Hatziminaoglou (IAC)	Intro talk	Framed AtLAST as a next-generation, sustainable 50-m-class (sub-)mm observatory and invited direct engagement from astronomers, engineers and instrumentation specialists.
04/06 10:00	Instrument Overview and Conceptual Design of the 50-meter Atacama Large Aperture Submm Telescope (AtLAST)	Tony Mroczkowski (ICE-CSIC)	Intro talk	Presented the observatory concept, wavelength coverage, field of view and first-generation instrumentation requirements, identifying technical participation routes.
04/06 10:30	From Star Formation to Cosmic Structure: The Transformative Science of AtLAST	Teresa Huertas Roldán (IAC); Jose Manuel Perez Martinez (IAC)	Intro talk	Outlined flagship science from Galactic star formation to extragalactic cold baryon cycles, supporting prioritisation of AtLAST science cases.
04/06 11:30	Advancing W-Band KIDs for Low-Frequency Millimeter-Wave Astronomy	Víctor Rollano (CAB, INTA-CSIC)	Invited talk	Showed superconducting detector developments relevant to future large-format millimetre instrumentation.
04/06 12:05	Magnification bias as an independent cosmological probe	Joaquín González-Nuevo (Universidad de Oviedo, ICTEA)	Contributed talk	Discussed AtLAST wide-field submillimetre surveys as a route to precision cosmology, complementary to Euclid, LSST, BAO and CMB probes.
04/06 12:30	Magnetic field in the circumgalactic medium of high-redshift galaxies using ASKAP	Sunil Malik (UCM)	Contributed talk	Linked radio Faraday-rotation studies with future AtLAST dust-polarisation capabilities for multi-scale magnetic-field constraints.
04/06 12:55	Extended Molecular Gas in Protoclusters: A Science Case for AtLAST	Helmut Dannerbauer (IAC)	Contributed talk	Identified AtLAST's role in recovering diffuse molecular gas in high-redshift dense environments, inaccessible to current facilities.
04/06 14:35	AtLAST as a prebiotic molecule detector	Izaskun Jiménez-Serra (CAB)	Invited talk	Explored AtLAST's potential for sensitive broadband molecular surveys and the detection of prebiotic complex organic molecules.

04/06 15:10	Unveiling the hidden architecture from AGB winds to Planetary Nebulae	Teresa Huertas Roldán (IAC)	Contributed talk	Proposed AtLAST surveys of evolved-star mass loss and diffuse circumstellar emission, recovering structures filtered out by interferometers.
04/06 15:30	Unveiling the aromatic Galaxy with AtLAST	Víctor M. Rivilla (CAB, CSIC-INTA)	Contributed talk	Highlighted Band 1 sensitivity for mapping aromatic molecular chemistry across Galactic environments.
04/06 15:55	Simulating mapping observations with AtLAST	Tony Mroczkowski (ICE-CSIC)	Contributed talk	Presented the maria simulator and tutorials to support science forecasting and observation-strategy planning.
04/06 16:55	Constraining Black Hole Demographics with SKAO: From High-Redshift AGN to Merging SMBHs	Sonia Anton (University of Coimbra & CFisUC)	Invited talk	Connected SKAO survey capabilities with future (sub-)mm facilities for multi-phase views of SMBH growth and galaxy evolution.
04/06 17:30	Full-Stokes monitoring of AGN jets with large (sub-)mm and radio facilities	Ioannis Myserlis (IRAM)	Contributed talk	Discussed long-term polarimetric monitoring and future prospects for high-sensitivity, wide-field AtLAST polarimetry.
04/06 17:55	User survey + Discussion	All participants	Discussion	Collected community input on needs, priorities and possible user engagement routes.
05/06 09:00	Yebes Observatory: expertise in single-dish radio astronomy, receiver technology and space geodesy as a contribution to the AtLAST era	Pablo de Vicente (Observatorio Astronómico Nacional, Obs. de Yebes)	Invited talk	The talk had to be suspended due to last-minute personal issues by the speaker.
05/06 09:45	Recent and future upgrades to the IRAM 30-meter telescope	Manuel Castillo-Fraile (IRAM); Miguel Sánchez-Portal (IRAM)	Contributed talk	Shared experience from an operational single-dish millimetre facility, relevant to AtLAST instrumentation, monitoring and operations.
05/06 10:10	Synergies between AtLAST and LSST	Ismael Pérez-Fournon (IAC)	Contributed talk	Explored time-domain and multi-wavelength synergies with Rubin/LSST alerts and southern-sky surveys.
05/06 10:35	Designing a sustainable off-grid power system in the Atacama Desert for AtLAST	Guillermo Valenzuela-Venegas (University of Oslo)	Contributed talk	Addressed renewable-energy systems, life-cycle assessment and community participation for sustainable astronomical infrastructure.
05/06 11:30	CMB research at the IAC. Science and Technology Synergies for AtLAST	Jose Alberto Rubiño Martín (IAC)	Invited talk	Highlighted CMB instrumentation, readout, calibration and RFI mitigation expertise relevant to AtLAST technology development.
05/06 12:05	Mock redshift surveys of the (sub-)mm-wavelength sky	Itziar Aretxaga (CAB CSIC-INTA)	Contributed talk	Provided simulated survey predictions for dusty star-forming galaxies and cluster progenitors, supporting AtLAST survey design.
05/06 12:30	Surveying galaxy clusters in formation in the distant Universe with AtLAST	Jose Manuel Perez Martinez (IAC)	Contributed talk	Developed the case for AtLAST spectral-imaging surveys of protoclusters and the baryon cycle in early dense environments.
05/06 12:55	Discussion	All participants	Discussion	Reviewed scientific and technical priorities arising from the morning session.
05/06 14:30	Participation in SKAO Science Data Challenges by an HPC resources provider - impressions and some lessons learned	Pedro Alberto (University of Coimbra)	Invited talk	Transferred lessons from SKAO data challenges to AtLAST data distribution and processing requirements.
05/06 15:05	Pulsars, Magnetars, and Fast Transients with AtLAST	Pablo Torne (IRAM)	Contributed talk	Identified high-time-resolution and wideband requirements for AtLAST transient science.
05/06 15:30	The Magnetised Cosmic Web: Joint RM and SZ Probes with AtLAST	Shane O'Sullivan (IPARCOS UCM)	Contributed talk	Showed how combining radio Faraday rotation and AtLAST SZ diagnostics can probe gas and magnetic fields in the cosmic web.
Poster	Magnetic Fields in the Shapley Supercluster of Galaxies	David Alonso López (UCM & IPARCOS); Shane O'Sullivan (UCM & IPARCOS)	Poster	Demonstrated ASKAP/POSSUM RM analysis relevant to large-scale magnetism science cases.
Poster	Multi-wavelength Observations of the Sun. Active Region 13852 in the Visible, UV, and (sub-)mm	Ignasi J. Soler Poquet (University of Oslo)	Poster	Connected AtLAST solar full-disk (sub-)mm observations with multi-wavelength solar physics.
Poster	Observing the Sun with AtLAST	Mats Kirkaune (University of Oslo)	Poster	Explored AtLAST's role in solar physics and space-weather-related observations.
05/06 15:55	Concluding remarks	Organizers	Closing	Summarised meeting outcomes and next steps for Iberian engagement with AtLAST.

5. Sponsors

- Red de Infraestructuras de Astronomía (RIA), through the 2026 Open Workshops / Reuniones Abiertas call.
- AtLAST-2 project, funded by the European Union Horizon Europe research and innovation programme, grant agreement No. 101188037.
- Support acknowledged by F. M. Montenegro Montes from PID2024-157374OB-I00, funded by MICIU / AEI / 10.13039/501100011033 / FEDER, UE.

Costs covered by RIA:

- **Lareira Catering: Coffee Breaks and lunches for 58 people, June 4 and 5: 2.572€**
 - **Ofipapel: Lanyards 135€**
- Total expenses covered by RIA: 2.607€**

6. Media impact

The meeting was disseminated primarily through scientific and infrastructure-community channels, including the sea-anuncios email distribution list or the AtLAST newsletter. Other referable public channels announcing or reporting on the event include:

Media coverage:

- UCM press release: <https://www.ucm.es/atlas-ucm>
- AtLAST newsletter summary: https://www.atlast.uio.no/news-and-events/news/2026/iberian_atlast_days
- LinkedIn post with >750 impressions, >370 members, 31 social engagements reached (as of 18/06/2026) https://www.linkedin.com/posts/franciscomontenegro-573a293a_atlast-astronomaeda-ucm-activity-7470347746051371020-ak42?utm_source=share&utm_medium=member_desktop&rcm=ACoAAAhWuecBg_YsBX-4meKpTw_b8VxP4hHYbC3A
- Announcements on X by Faculty of Physics: https://x.com/Fisicas_UCM/status/2065141149690470715 and Bluesky <https://bsky.app/profile/elkriti.bsky.social/post/3mol6jspljc27>

Announcements

- Indico event webpage: <https://indico.iparcos.ucm.es/event/10/>
- AtLAST news/events page announcement: <https://www.atlast.uio.no/news-and-events/events/IberianAtlastdays.html>
- RIA website listing/news: <https://riastronomia.es/en/>
- SEA astronomy event listing: <https://www.sea-astronomia.es/iberian-atlast-days>
- 10times event listing: <https://10times.com/e1hx-h02p-r5g3-d-iberian-atlast-days>

7. Summary of the meeting

The Iberian AtLAST days successfully created a focused forum for the Spanish and Portuguese (sub-)mm communities to discuss AtLAST as a future transformative facility and to identify areas where Iberian institutions can contribute scientifically and technically. The programme combined introductory project talks, invited presentations, contributed science cases, facility-synergy talks, poster sessions, coffee/lunch networking and dedicated discussion slots.

A central output was the consolidation of a broad AtLAST science portfolio. Contributions covered star formation, the interstellar and circumgalactic media, molecular gas in protoclusters, evolved stars, prebiotic chemistry, aromatic molecules, AGN and black-hole demographics, solar physics, CMB-related technologies, galaxy-cluster formation, time-domain astrophysics and cosmic magnetism. These talks highlighted the need for wide-field, high-sensitivity

single-dish (sub-)mm mapping, recovery of extended emission, polarimetric capabilities, wideband/high-time-resolution instrumentation and robust survey-simulation tools.

The meeting also identified important technical and operational recommendations. These included strengthening detector-development work, using simulation tools for observation planning, drawing lessons from current single-dish facilities such as IRAM and Yebes, anticipating large data volumes through HPC and SKAO data-challenge experience, and embedding sustainability in the design of future observatories, especially through renewable off-grid energy systems and dialogue with local communities.

The discussions reinforced the relevance of RIA as a framework for connecting Spanish astronomical infrastructures, observatories, university groups and international partners. The event broadened participation in AtLAST planning and provided a practical basis for future collaborations, proposals and technical working groups linked to the next stages of the project.

Appendix. Programme and participant information

A.1 Condensed programme

Date	Time	Session	Notes / location
Thursday 4 June 2026	09:00-09:30	Registration and Welcome	Sala de grados
Thursday 4 June 2026	09:30-11:00	Presentations I	AtLAST overview, conceptual design and transformative science
Thursday 4 June 2026	11:00-11:30	Coffee break / Posters	Cafetería estudiantes, Floor -1
Thursday 4 June 2026	11:30-13:20	Presentations II	Detectors, cosmology, CGM magnetism and protocluster gas
Thursday 4 June 2026	13:20-14:35	Lunch break / Poster session	Cafetería estudiantes, Floor -1
Thursday 4 June 2026	14:35-16:25	Presentations III	Prebiotic molecules, evolved stars, aromatic molecules and simulations
Thursday 4 June 2026	16:25-16:55	Coffee break / Posters	Cafetería estudiantes, Floor -1
Thursday 4 June 2026	16:55-18:25	Presentations IV + Discussion	SKAO, AGN polarimetry, user survey and discussion
Friday 5 June 2026	09:45-11:00	Presentations V	IRAM upgrades, LSST synergies and sustainable power systems
Friday 5 June 2026	11:00-11:30	Coffee break / Posters	Cafetería estudiantes, Floor -1
Friday 5 June 2026	11:30-13:25	Presentations VI + Discussion	CMB synergies, mock surveys, protoclusters and discussion
Friday 5 June 2026	13:25-14:30	Lunch break / Poster session	Cafetería estudiantes, Floor -1
Friday 5 June 2026	14:30-16:10	Presentations VII	SKAO data challenges, transients, cosmic magnetism, concluding remarks

A.2 Participant list

Total number of participants (in person and online): 63 registered participants: 21 women (33%), 42 men (66%).

ID	Name	Affiliation
1	Ainhoa Sánchez Penim	UCM / IPARCOS
2	Alicia Gomez	Centro de Astrobiología (CSIC-INTA)
3	Alvaro Hacar	Department of Astrophysics, University of Vienna
4	Armando Gil de Paz	UCM / IPARCOS
5	Carlos Durán	ESO
6	Carmen Sánchez Contreras	Centro de Astrobiología (CAB), CSIC-INTA
7	Ciro Pappalardo	Institute of Astrophysics and Space Sciences
8	Ciska Kemper	ICE-CSIC / ICREA / IEEC
9	Cristina Catalán-Torrecilla	UCM / IPARCOS
10	Eleonora Barbavara	Sapienza University of Rome
11	Enrica Bellocchi	UCM / IPARCOS
12	Evanthia Hatziminaoglou	IAC/ESO
13	Francisco Montenegro	IPARCOS - UCM
14	Giovanni Isopi	Sapienza Università di Roma
15	Guillermo Quintana-Lacaci	Instituto de Física Fundamental (IFF-CSIC)
16	Guillermo Valenzuela-Venegas	Department of Technology Systems, University of Oslo
17	Hector Socas-Navarro	European Solar Telescope Foundation
18	Helmut Dannerbauer	Instituto de Astrofísica de Canarias
19	Ignasi Josep Soler Poquet	University of Oslo
20	Ioannis Myserlis	Institut de Radioastronomie Milimétrique (IRAM)
21	Isabel Rebolledo	Centro de Astrobiología (INTA-CSIC)
22	Ismael Pérez-Fournon	Instituto de Astrofísica de Canarias

23	Itziar Aretxaga	Centro de Astrobiología (CAB) INTA-CSIC
24	Iván Gallardo Cava	Observatorio Astronómico Nacional (OAN-IGN)
25	Ivanna Langan	Centro de Astrobiología
26	Izaskun Jiménez-Serra	Center of Astrobiology (CAB)
27	Jaime Alonso Hernández	Centro de Astrobiología (CSIC-INTA)
28	Jesús Gallego	UCM / IPARCOS
29	Joaquín González-Nuevo	Universidad de Oviedo -- ICTEA
30	Jose Alberto Rubiño Martín	Instituto de Astrofísica de Canarias
31	Jose Manuel Perez Martínez	Instituto de Astrofísica de Canarias (IAC)
32	Julián José Miranzo Pastor	Centro de Astrobiología (CAB) CSIC-INTA
33	Laura Colzi	Centro de Astrobiología (CAB), CSIC-INTA
34	Luis Velilla Prieto	Instituto de Física Fundamental (IFF-CSIC)
35	Mahmoud Hamed	Centro de Astrobiología (CAB)
36	Manuel Castillo-Fraile	IRAM-30m Deputy Manager and Technical Coordinator
37	Manuel Fernández López	Institut de Ciències de l'Espai
38	Manuel Solimano	Centro de Astrobiología (CAB) INTA-CSIC
39	María Cividanes	UCM / IPARCOS
40	Mats Kirkaune	Roseland Centre for Solar Physics, University of Oslo
41	Miguel Gómez Garrido	Observatorio Astronómico Nacional/Observatorio de Yebes / IGN
42	Miguel Sánchez-Portal	Institut de Radioastronomie Millimétrique - IRAM
43	Miguel Santander García	Observatorio Astronómico Nacional (OAN-IGN)
44	Miriam Cortés Contreras	UCM / IPARCOS
45	Mohamed Kaab	Sultan Moulay Sliman University, LRSTA
46	Pablo de Vicente	Observatorio de Yebes, IGN
47	Pablo Torne	Instituto de Radioastronomía Milimétrica (IRAM)
48	Paola Andreani	ESO
49	Paula Tarrío	Observatorio Astronómico Nacional (OAN-IGN)
50	Pedro Alberto	Universidade de Coimbra
51	Román Fernández Aranda	Centro de Astrobiología (CAB), INTA-CSIC
52	Shane O'Sullivan	UCM / IPARCOS
53	Sonia Antón	Universidade de Coimbra & CFisUC
54	Sunil Malik	UCM
55	Teresa Huertas Roldán	Instituto de Astrofísica de Canarias
56	Thomas Morris	Yale University
57	Tony Mroczkowski	Institute of Space Sciences (ICE-CSIC)
58	Víctor M. Rivilla	Centro de Astrobiología (CAB), CSIC-INTA
59	Victor Rollano	Centro de Astrobiología (INTA-CSIC)

The following registered participants attended online:

ID	Name	Affiliation
1	Ana Paulina Afonso	IA-UPorto/CAUP
2	Miriam G. García-Santamaría	IFF-CSIC
3	Pedro Villalba-González	University of British Columbia
4	Ricardo T. Génova-Santos	Instituto de Astrofísica de Canarias

Sources used for this draft

- Indico overview page: <https://indico.iparcos.ucm.es/event/10/>
 - Indico contribution list: <https://indico.iparcos.ucm.es/event/10/contributions/>
 - Indico timetable, standard view: <https://indico.iparcos.ucm.es/event/10/timetable/?view=standard>
 - Indico participant page: <https://indico.iparcos.ucm.es/event/10/registrations/participants>
- Attendance list provided by the LOC: Attendance List ID_June 4.pdf
- Indico SOC and LOC page: <https://indico.iparcos.ucm.es/event/10/page/1-soc-and-loc>