2026 Workshop: Frontiers in Equatorial Aeronomy

Long title
Frontiers in Equatorial Aeronomy
Conveners
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Description

We invite short presentations related to new developments in equatorial aeronomy and space weather. Topics of interest include new experimental methodologies using existing or planned ground- or space-based instruments, new modeling and simulation tools applied to problems in the equatorial atmosphere and ionosphere, and emerging theories governing the background state or the emergence of instabilities and irregularities. Special consideration will be given to early-career scientists making novel contributions to the field.

Agenda

Danny Scipion: JRO+upgrades update
Aaron Kirchman: ESF forecast studies and PRE stability
Fatima Yousuf: Day-to-day PRE variability
Brian La Rosa: ISR spectrum and Coulomb collisions
Marcos Inonan: J-ARGUS project update
Carla Arce: J-ARGUS antenna analysis
Germain Vega: XMHD equatorial ionosphere model
Sreelakshmi Jayaraman: global potential solver

Justification

A number of new opportunities for research in equatorial aeronomy and space physics are on the horizon. Some of these are motivated by profound upgrades which have taken place recently at the Jicamarca Radio Observatory. Upgrades include capabilities for rapid electronic beam steering as well as long-duration

incoherent scatter measurements. In addition, a pair of long-wavelength array (LWA) systems are being prepared for deployment near Jicamarca. These will afford the observatory with tristatic capabilities while also opening numerous other research avenues in aeronomy and astronomy. Furthermore, we continue to anticipate a NASA sounding rocket campaign to take place from the Punta Lobos range in Peru in the next few years. Several spacecraft missions in place or on the books as well as a number of theoretical developments invite additional, novel investigations in the equatorial zone.

Summary

Ballroom Jr., Monday, 1600--1800

In person only.

Related to CEDAR Science Thrusts:
Explore exchange processes at boundaries and transitions in geospace
Develop observational and instrumentation strategies for geospace system studies
Fuse the knowledge base across disciplines in the geosciences
Manage, mine, and manipulate geoscience/geospace data and models
Workshop format
Short Presentations
Keywords
equatorial ionosphere, incoherent scatter radar, space weather
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