# 2018 Workshop: Low latitude space WX

Long title
Integrative Space Weather at Low Magnetic Latitudes
Conveners
David Hysell
Marco Milla
Description

The first half of the workshop will address the general theme of space weather at low magnetic latitudes including topics ranging from ionospheric instabilities and irregularities (i.e. equatorial spread F) to plasmaspheric drainage and refilling to magnetospheric coherent scatter to solar sounding. The second half will be more focused, concentrating on a planning a NASA sounding rocket campaign in Peru anticipated for 2021. Potential sounding rocket PIs and co-Is as well as scientists with complementary instruments and models are encouraged to take part.

Agenda

Agenda: Session A

David Hysell, Integrative space weather at low geomagnetic latitudes.

Marco Milla, The Jicamarca Radio Observatory: Radar modes for Space Weather studies

Joe Huba, Metal ions and Equatorial Spread F.

Fabiano Rodrigues, Multi-instrumented observations of June solstice ESF at the Jicamarca Radio Observatory

Meers Oppenheim, 150-km echo Variability: Observations and Possible Causes

Tzu Wei Fang, Model development for space weather prediction at low latitudes

Cesar Valladares, Investigations of TEC depletions using LISN

Astrid Maute, Aspects of simulating the low latitude, large scale 3D ionospheric current system

Agenda: Session B

Marco Milla - Update on preparations for a NASA sounding rocket campaign in Peru

Robert Pfaff - NASA whitepaper review/ new research in the daytime and nighttime electrojet

Gerald Lehmacher - Mesospheric and ionospheric science investigations for Peru sounding rocket campaign

Jim Clemmons -

Dave Hysell - Equatorial postsunset valley layers

Claudia Stolle - Electric currents associated to F-region plasma irregularities observed by the Swarm satellites

Scott England - Opportunities for coordinated measurements with ICON

Dimitry Pokhotelov - MMARIA: Ground based capability to measure upper mesosphere and lower thermospheric winds around Jicamarca

Justification

The equatorial ionosphere was once regarded as being isolated from much of the rest of the ITM system, exhibiting its own unique form of space weather in the form of a variety of ionospheric instabilities and irregularities mostly unique to the region, e.g. equatorial spread F (ESF). However, ESF has proven difficult to forecast reliably, and this paradigm is too limiting. It is now widely appreciated that ionospheric stability in the equatorial zone is influenced by external thermospheric and geomagnetic drivers. As we consider higher altitudes and consider the equatorial plasmasphere and magnetosphere, the isolation between latitude regimes becomes even more tenuous. New experimental capabilities at the Jicamarca Radio Observatory make it possible to examine the coupling of the equatorial ionosphere to regions below and above the F region as well as the coupling to the thermosphere, the plasmasphere, the magnetosphere, and the sun. This workshop seeks to explore the capabilities and the coupling.

View PDF