2016 Workshop: Frontier research in equatorial aeronomy

Long title
Frontier research in equatorial aeronomy
Conveners
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Description

The workshop will include three sessions focusing on radar techniques, lidar deployments, and a possible sounding rocket campaign in 2020. We envision a combination of invited and solicited presentations with moderated discussions in between the sessions. Presentations addressing new or anticipated capabilities at Jicamarca (e.g. the imagers, AMISR-14, electronic beam steering, high-power modes) are particularly welcome.

Agenda

Speakers - Thursday afternoon:

Marco Milla - “Report on Jicamarca activities and experiments” (pdf)
Dave Hysell - "High-performance experiments at Jicamarca" (pdf)
Fabiano Rodrigues - "On vertical F-region drifts and equatorial spread-F using Jicamarca ISR measurements made over the past 2 solar cycles" (pdf)
Gerald Lehmacher - "Whole atmosphere-ionosphere observations" (pdf)
Jade Morton - "Ionospheric scintillation activities observed from a multi-GNSS receiver at Jicamarca" (pdf)
Cesar Valladares -"Combining Jicamarca and LISN data and a numerical model of the low latitude ionosphere to calculate the meridional neutral winds" (pdf)
Edgardo Pacheco - "Development of CubeSat instrumentation and ground-based receivers at the Jicamarca Radio Observatory for TEC measurements" (pdf)
Dustin Hickey - "Jicamarca All-Sky Imager: ESF observations" (pdf)
Luis Navarro - "Gravity Wave detection over the Jicamarca Radio Observatory using

a Nightglow Allsky Imager: First results" (pdf)

Speakers - Friday morning:

Robert Pfaff - Rocket campaigns
Miguel Larsen
Jon Makela
David Fritts - Lidar efforts
Xinzhao Chu

Justification

We are convening a workshop to pursue frontier areas of research in equatorial aeronomy in general and at the Jicamarca Radio Obsevatory in particular. Our challenge will be to address themes across the full breadth of geospace including coupling from below, coupling from above, space weather, and the Sun-Earth connection. We are also compelled to exploit synergies with existing and planned NASA missions including ICON and GOLD. Our strategy has three components - the development of avant garde, high-altitude radar modes at Jicamarca, the deployment of one or more lidars to Peruvian region, and the organization of a NASA rocket campaign from Punta Lobos in 2020. All of these components require new partners, technologies, and resources, and so planning is necessary. Join in the planning today and the discovery tomorrow.

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