2023 Workshop: GDC

Long title
GDC Mission: Instruments & Science
Conveners
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Description

The Geospace Dynamics Constellation (GDC) is a mission to study the coupling between the magnetosphere and the ionosphere/thermosphere system. GDC will address crucial scientific questions pertaining to the dynamic processes active in Earth's upper atmosphere; their local, regional, and global structure; and their role in driving and modifying magnetospheric activity. GDC will be the first mission to address these questions on a global scale due to its use of a constellation of spacecraft (6) that permit simultaneous multi-point observations. In this session we will have a panel describing the mission and selected instruments, followed by short presentations on current state of geospace and open questions that may be addressed by the GDC mission.

Agenda

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This GDC workshop will be dedicated to the selected GDC instruments. Questions, discussion, and student participation are strongly encouraged!

AGENDA

10:10-10:15 Doug Rowland: An overview of the GDC mission (PDF)

10:15-10:25 Questions/Discussion

10:25-10:35 Scott England: MOSAIC (PDF)

10:35-10:45 Phil Anderson: TPS (PDF)

10:45-10:55 Questions/Discussion

10:55-11:05 Olga Verkhoglyadova: “PROFILE: exploring space weather with radio occultation” (PDF)

11:05-11:15 Laila Andersson: AETHER

11:15-11:25 Questions/Discussion

11:25-11:35 David Knudsen: CAPE (PDF)

11:35-11:45 Aaron Ridley: NEMISIS (PDF)

11:45-12:00 Questions/Discussion

Justification

The GDC mission was recommended by the 2013 Heliophysics Decadal Survey and requires extensive community engagement for its success. This is an opportunity for the community to help craft the ecosystem of science that will be achieved with GDC throughout the geospace system. Given the wealth of observations the CEDAR community works with, there are ample opportunities for collaboration which may lead to insights into coupling of atmospheric regions, coupling of the ionosphere and thermosphere, wave dynamics, electrodynamics, vertical energy transfers, composition anomalies, and the implied dynamics of the magnetosphere, thermosphere, and ionosphere.

Related to CEDAR Science Thrusts:
Encourage and undertake a systems perspective of geospace
Develop observational and instrumentation strategies for geospace system studies
Workshop format
Short Presentations
Keywords
GDC, ionosphere, thermosphere
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