2025 Workshop: Dayside Knowledge Gaps and Planning

Long title
Identifying Knowledge Gaps in Dayside Transient Processes Research
GEM-only session
Conveners
Savvas Raptis
Ivan Vasko
Imogen Gingell
Terry Z. Liu
Ying Zou
Runyi Liu
David Tonoian
savvas.raptis@jhuapl.edu
Description

Multiscale Dayside Transients play a key role in solar wind–magnetosphere–ionosphere coupling by influencing magnetopause morphology, field-aligned currents (FACs), auroral dynamics, and magnetopause reconnection processes. Although recent missions such as the Magnetospheric Multiscale (MMS) and advances in hybrid computer simulations have greatly enhanced our understanding, a significant disconnect remains between modeling and observations. This gap stems from the multiscale nature of these events and their dynamic evolution, which spans spatial and temporal scales that challenge both in-situ measurements and modeling tools.

In this session, we will review the key findings from the past decade that have emerged alongside advancements in hybrid modeling, and large-data statistical analysis. Experts from both the modeling and observational dayside research communities will share their perspectives. In addition, presenters with relevant posters will have the opportunity to highlight their work through lightning talks, fostering a vibrant discussion across the community.

Agenda

Zoom link:
https://jhuapl.zoomgov.com/j/1612929646?pwd=w4D4RqbLyAoE0EBj5TE4S4tC5Tw1Jo.1

Please see Agenda on:
https://docs.google.com/spreadsheets/d/1rojmNUKMP581TDS9JKz2R9-E9Zto8tLkqPVGw9x286w/edit?usp=sharing

Justification

This session is fundamental to our Year 1 objective of identifying key knowledge gaps through observation–simulation comparisons. Moreover, it will provide the necessary foundation for establishing a clear GEM challenge following our initial group meeting.

Related to CEDAR Science Thrusts:
Encourage and undertake a systems perspective of geospace
Explore exchange processes at boundaries and transitions in geospace
Explore processes related to geospace evolution
Manage, mine, and manipulate geoscience/geospace data and models
Workshop format
Panel Discussion
Round Table Discussion
Other
Keywords
dayside, transients, magnetosphere, multiscale
View PDF