

MMS Spring 2021 Science Working Team Meeting

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MEETING LOGISTICS & HOW-TOs (INCLUDING GATHER FOR POSTER SESSION)

MEETING ZOOM DETAILS (All Sessions except Splinter #6)

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Meeting ID: 161 493 9981

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Password: 860924

MEETING SLACK DETAILS

Instructions: using Slack to chat with MMS team during meeting

Join our Slack => [https://join.slack.com/t/mmsspring2021-mbv5597](https://join.slack.com/t/mmsspring2021-mbv5597/shared_invite/zt-nnwo71ra-0o2fx6xtDmLgIkhNyVdgVQ)
[/shared_invite/zt-nnwo71ra-0o2fx6xtDmLgIkhNyVdgVQ](https://join.slack.com/t/mmsspring2021-mbv5597/shared_invite/zt-nnwo71ra-0o2fx6xtDmLgIkhNyVdgVQ)

MEETING SCHEDULE

<u>MEETING SCHEDULE</u>				
Monday (5 Apr)	Tuesday (6 Apr)	Wednesday (7 Apr)	Thursday (8 Apr)	Friday (9 Apr)

M o r n i n g S e s s i o n (1 0a -1 2p E as te rn ; 7 -9 a P ac ifi c; 4- 6p P ar is; 1 1p -1 a T ok yo)		Splinter #1 Reconnection, Turbulence, & Waves	Splinter #3 Transient Magnetopause Processes	Splinter #4 Collisionless Shocks	Plenary #2 Outbriefs from Splinter Sessions
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A ft e r n o n S e s s i o n (1 -3 p E a s t e r n ; 10 a- 12 p P a c i f i c; 7- 9p P a r i s; 2- 4a T o k y o)	Plenary #1 Mission Updates	Splinter #2 MMS in the HSO	POSTER & SOCIAL SESSION	Splinter #5 Electron-only Reconnection	Splinter #6 Particle Acceleration	

Please refresh your browser windows frequently as folks will be updating continuously

Plenary Session #1

Splinter Session #1

Splinter Session #2

Monday, April 5 (*Afternoon*)

1:00 pm - 3:00 pm Eastern
(10a-12p Pacific; 7-9p Paris; 2-4a Tokyo)

Mission Updates

SESSION PRESENTATIONS AND RECORDINGS

Chairs/Organizers: Ian Cohen

Presenter	Talk Title	Time
Ian Cohen (APL)	Welcome & Meeting Logistics	10 min
Jim Burch (SwRI)	Project Updates	10 min
Seth Shulman (GSFC)	Mission Status /MOC Updates	20 min
Trevor Williams (GSFC)	Formation Updates	20 min
Gina Lafferty (LASP)	POC Updates	20 min
Kris Larsen (LASP)	SDC Updates	20 min

Tuesday, April 6 (*Morning*)

10:00 am - 12:00 pm Eastern
(7-9a Pacific; 4-6p Paris; 11p-1a Tokyo)

Reconnection, Turbulence, & Waves

SESSION PRESENTATIONS AND RECORDINGS

Chairs/Organizers: Shan Wang, Bill Matthaeus, Alexandros Chasapis, Riddhi Bandyopadhyay, Rohit Chhiber, Roman Gomez, Li-Jen Chen

Presenter	Talk Title	Time
Matthew Argall	Kinetic entropy and information loss with MMS	10:02 EST
Kyunghwan Dokgo	Energy dissipation via upper-hybrid waves	10:12
Rick Wilder	Whistler wave observations	10:22
Naoki Bessho	Whistler waves due to nongyrotropic and gyrotronic electron beams in asymmetric guide field reconnection	10:32
Giulia Cozzani	The structure of a perturbed EDR with electromagnetic fluctuations at the lower-hybrid frequency	10:42
Deirdre Wendel	Dissipation and Angular Momentum in Reconnection	10:52
Riddhi Bandyopadhyay	Dissipation, J.E and Pressure-Strain Interaction	11:02
Michael Hesse	Can low-density inflow drive current sheet turbulence?	11:12
Subash Adhikari	Reconnection as a Turbulence Process	11:22

Tuesday, April 6 (*Afternoon*)

1:00 pm - 3:00 pm Eastern
(10a-12p Pacific; 7-9p Paris; 2-4a Tokyo)

MMS as part of the Heliophysics System Observatory

SESSION PRESENTATIONS AND RECORDINGS

Chairs/Organizers: Rachael Filwett, Sarah Vines, Allison Jaynes

Presenter	Talk Title	TIME
Rachael Filwett	Brief Session Introduction	
Rumi Nakamura	Scene-Setting: Multi-point observations of dipolarization during an intense substorm	
Craig Kletzing	Scene-Setting: The science of TRACERS and how it informs M-I coupling and reconnection	
Kevin Genestreti	Scene-Setting: Magnetotail reconnection onset: multi-mission observations	
Mojtaba Akhavan-Tafti	Scene-Setting: Magnetic Reconnection in Extreme Plasma Environments	
Christine Gabrielse	Scene-Setting: Energetic Particles in Two Different Regions: Plasma Sheet and Solar Wind	
HSO Discussion Breakouts		
Summary Discussion		Su

Owen Roberts	Preliminary study of the electron density spectrum at high frequencies in the turbulent magnetotail	11:32
	Open Discussions	11:42

Followed by topical discussion groups will be focusing on: (1) solar wind (including bow shock and transients); (2) M-I coupling; (3) inner magnetosphere; (4) outer magnetosphere - dayside; (5) outer magnetosphere - tail. We will provide initial discussion questions to jump-start group dialogue.

Additionally, we are looking for graduate student or post-doc volunteers to be discussion-facilitators and notetakers in our discussion groups. If you are interested in assisting in these discussion groups please send an email to Rachael-Filwett@uiowa.edu.

Splinter Session #3

Wednesday, April 7 (Morning)

10:00 am - 12:00 pm
Eastern
(7-9a Pacific; 4-6p
Paris; 11p-1a Tokyo)

Transient Processes at the Earth's Magnetopause

SESSION PRESENTATIONS AND RECORDINGS

Chairs/Organizers: Rungployphan Kieokaew, Kyoung-Joo Hwang, Julia Stawarz, Benoit Lavraud, Vincent Genot

Speaker	Talk Title	Time
Kevin Blasl	Induced secondary instabilities at the edges of the KH-waves and at the vortex arms during southward IMF	10:00
Adriana Settino	Kinetic features in the Kelvin-Helmholtz instability	10:15
Katariina Nykyri	Diamagnetic cavities -high-latitude, dayside source of energetic particles in the Earth's magnetosphere	10:30
Rungployphan Kieokaew	Discussion and summary (+short advertisements)	10:45
Yi Qi	Flux rope interactions in the magnetosphere and beyond	11:00

Poster Session & Social Gathering

Wednesday, April 7 (Afternoon)

1:00 pm - 3:00 pm Eastern
(10a-12p Pacific; 7-9p
Paris; 2-4a Tokyo)

General Contributions

POSTER ARCHIVE

Chairs/Organizers: Romina Nikoukar, Ian Cohen

Splinter Session #4

Thursday, April 8 (Morning)

10:00 am - 12:00 pm
Eastern
(7-9a Pacific; 4-6p
Paris; 11p-1a Tokyo)

Collisionless Shocks

SESSION PRESENTATIONS AND RECORDINGS

Chairs/Organizers: Steve Schwartz, Hadi Madanian, Lynn Wilson, Drew Turner, Lijen Chen

Speaker	Talk Title	Time
Takanobu Amano	PIC Simulations of collisionless shocks	10:00
Michael Starkey	Pick-up Helium at collisionless shocks	10:20
Ivan Vasko	Electric fields at collisionless shocks	10:40
Imogen Gingell	Current sheets and reconnection in the context of the bow shock	11:00
Drew Turner	Future goals and mission/instrument ideas for collisionless shock research	11:20
Open	One-slide presentations and discussion	11:40

Marcos Silveira	Flux transfer event with an electron-scale substructure observed by the Magnetospheric Multiscale Mission	11:15
Rungployphan Kieokaew	Overview and recent advances in flux rope and interlinked flux tube studies in magnetospheric environments	11:30
Joo Hwang	Discussion and summary (+short advertisements)	11:45

Splinter Session #5

Thursday, April 8 (*Afternoon*)

1:00 pm - 3:00 pm Eastern
(10a-12p Pacific; 7-9p Paris; 2-4a Tokyo)

Electron-only Reconnection

SESSION PRESENTATIONS AND RECORDINGS

Chairs/Organizers: Julia Stawarz, Prayash Pyakurel

Presenter	Talk Title	Time
Julia Stawarz	Introduction	1:00pm (5 min)
Steve Schwartz et al.	Energy Conversion within Current Sheets in the Earth's Quasi-parallel Magnetosheath	1:05pm (10 + 5 min)
Imogen et al.	Electron-only reconnection at the bow shock	1:20pm (10 + 5 min)
Mark Hubbert et al.	Electron-Only Magnetotail Current Sheets and Their Temporal Evolution	1:35pm (10 + 5 min)
Rick Wilder	Interactions between whistler waves and parallel electric fields in electron-only magnetosheath reconnection	1:50pm (3 + 2 min)

Splinter Session #6

Thursday, April 8 (*Afternoon*)

1:00 pm - 3:00 pm Eastern
(10a-12p Pacific; 7-9p Paris; 2-4a Tokyo)

Particle Acceleration

SESSION PRESENTATIONS AND RECORDINGS

Chairs/Organizers: Sasha Alexandrova, Barry Mauk, Rumi Nakamura, Dan Baker

Presenter	Talk Title	Time
Barry Mauk	Introduction	2 min
Ian Cohen	On energetic electrons near active magnetotail reconnection sites	12 min
Drew Turner	On electron acceleration related to reconnection in the magnetotail	12 min
Harry Arnold	On self-consistent simulations of electron acceleration in magnetic reconnection	12 min
Jim Drake	On the energetic particle measurements with respect to MMS	12 min
Rumi Nakamura	On electron acceleration signature of a dipolarization front during a BBF	12 min

Plenary Session #2

Friday, April 9 (*Morning*)

10:00 am - 12:00 pm Eastern
(7-9a Pacific; 4-6p Paris; 11p-1a Tokyo)

Summaries & Outbriefs from the Splinter Sessions

SESSION PRESENTATIONS AND RECORDINGS

Chairs/Organizers: Ian Cohen

Presenter	Talk Title	Time
Shan Wang	Splinter #1 - Reconnection, Turbulence, & Waves	15 min
Rachael Filwett	Splinter #2 - MMS as Part of the HSO	15 min
Rungployphan Kieokaew	Splinter #3 - Transient Processes at Earth's Magnetopause	15 min
Lynn Wilson	Splinter #4 - Collisionless Shocks	15 min
Julia Stawarz	Splinter #5 - Electron-only Reconnection	15 min
Sasha Alexandrova	Splinter #6 - Particle Acceleration	15 min

Alexandros Chasapis	Electron-scale structures and electron acceleration in magnetosheath turbulence	1: 55pm (3 + 2 min)
Riddhi Bandyopadhyay	Dissipation in electron-only reconnection: insights from pressure-strain interaction	2: 00pm (3 + 2 min)
Julia Stawarz	Turbulence-Driven Reconnection in Earth's Magnetosheath	2: 05pm (3 + 2 min)
Naoki Bessho	Electron acceleration in electron-only reconnection in the Earth's quasi-parallel bow shock	2: 10pm (3 + 2 min)
Mikhail Sitnov et al.	Electron and ion watersheds as precursors of the magnetotail reconnection: 3D PIC simulations and MMS observations	2: 15pm (3 + 2 min)
San Lu	Electron-only reconnection in the magnetotail: PIC simulations	2: 20pm (3 + 2 min)
Yi-Hsin Liu	The Effect of Thermal Pressure on Collisionless Magnetic Reconnection Rate	2: 25pm (3 + 2 min)
Kristina Pritchard	Reconnection Rates and Guide Fields in the EDR	2: 30pm (3 + 2 min)
Prayash Pyakurel	Electron-only reconnection: Overview of simulations	2: 35pm (3 + 2 min)
	Open Discussion	2: 40pm (20 min)

Filomena Catapano	On the ion energization between consecutive jet fronts in the magnetotail	12 min
Joachim Birn	On the oxygen ion acceleration	12 min
Trevor Leonard	On substorm sequence observed by MMS in combination with several other observatories	12 min
Allison Jaynes	Investigating energetic electron acceleration in the low-latitude boundary layer	12 min
	Open Discussion	10 min