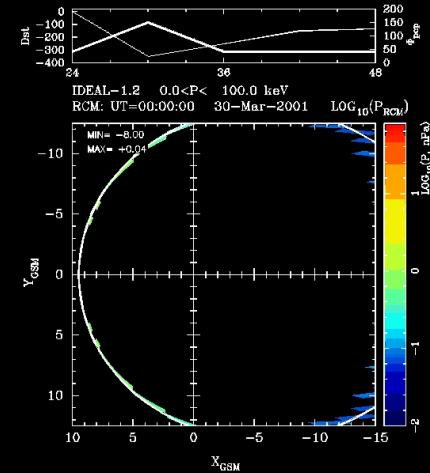
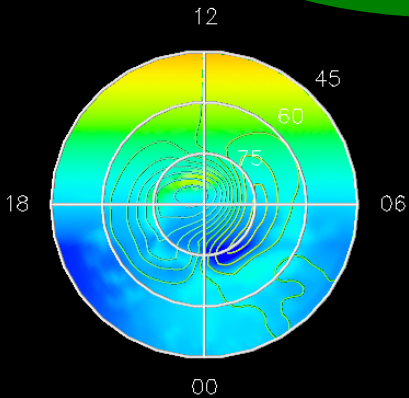
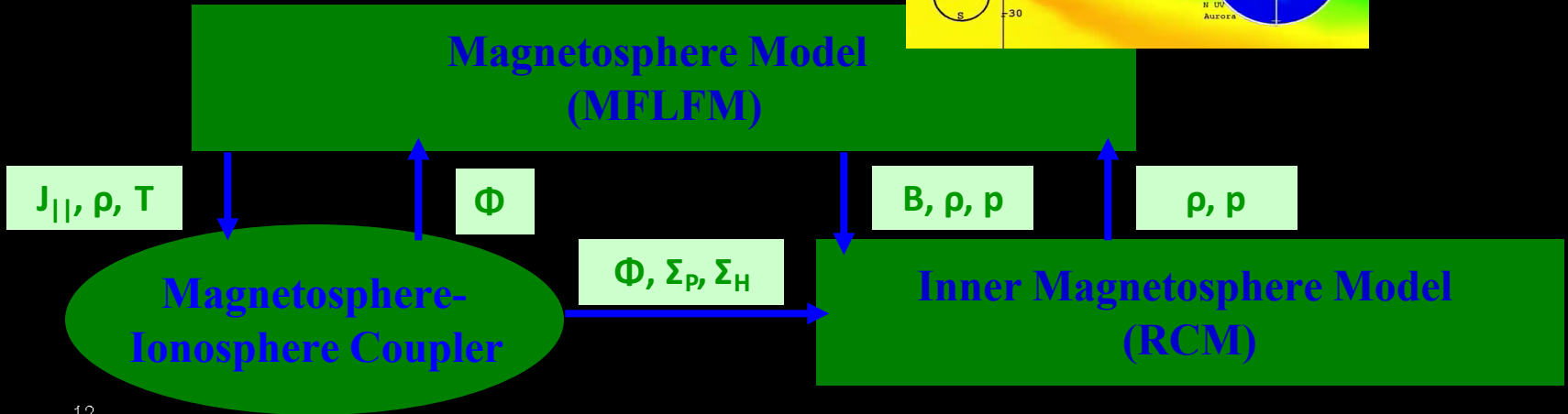
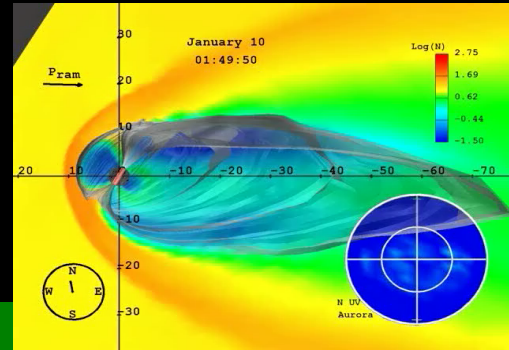


# Effect of Anomalous electron heating in Coupled LFM-RCM Simulations of the March 17-18, 2013 geomagnetic storm

M. Wiltberger  
NCAR/HAO

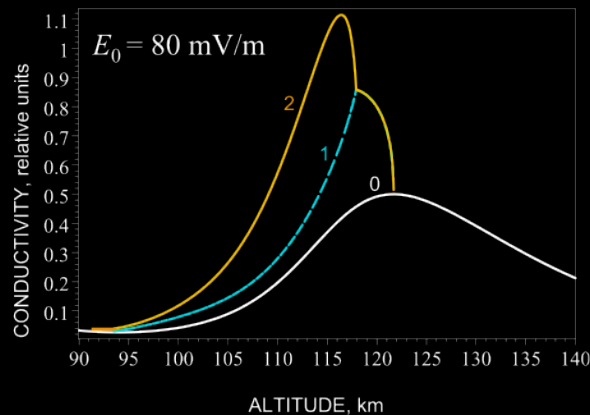
Contributors include J. Lyon, V. G. Merkin, M. Oppenheim, F. Toffoletto, W. Wang, B. Zhang,

# LFM-RCM

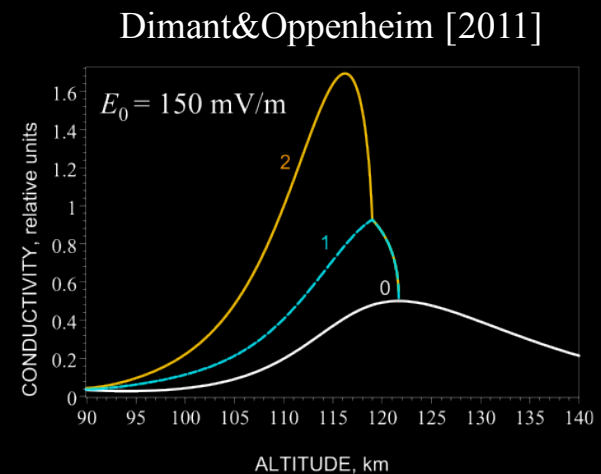


# Use Farley-Buneman-corrected ionospheric conductances

- Two-stream instability in the electrojets modifies conductivity via two mechanisms: anomalous electron heating and non-linear DC current.



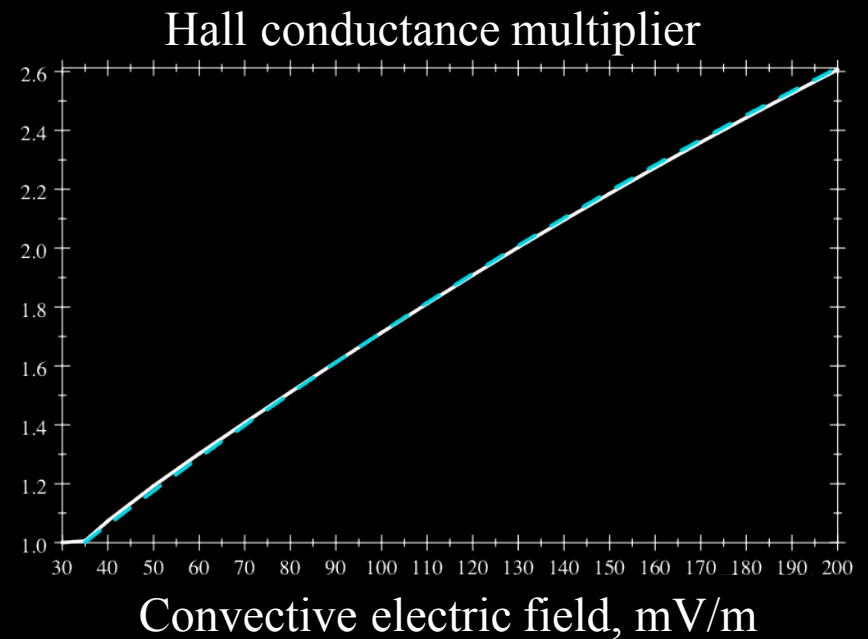
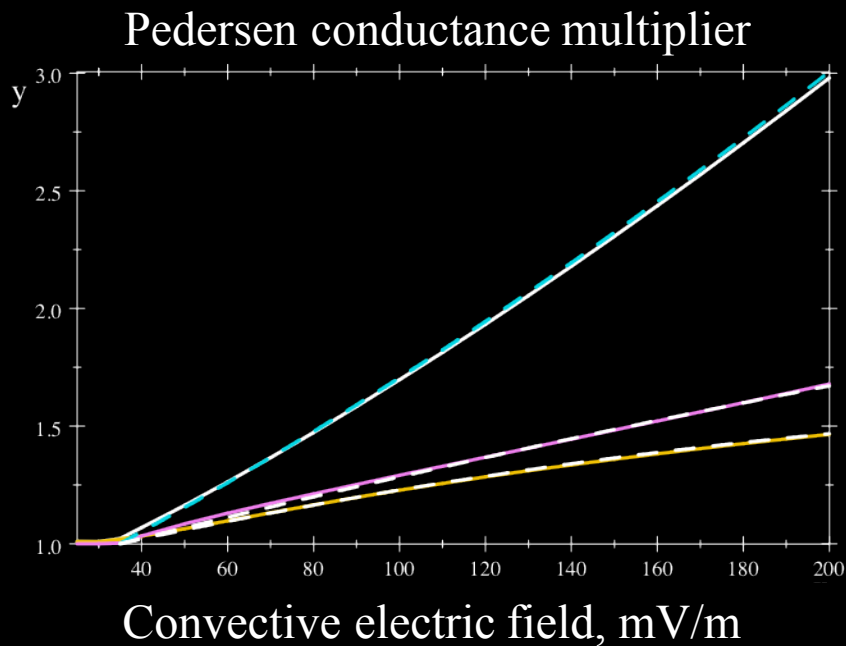
0 – laminar  
1 – non-linear  
current  
2 – anomalous  
electron heating



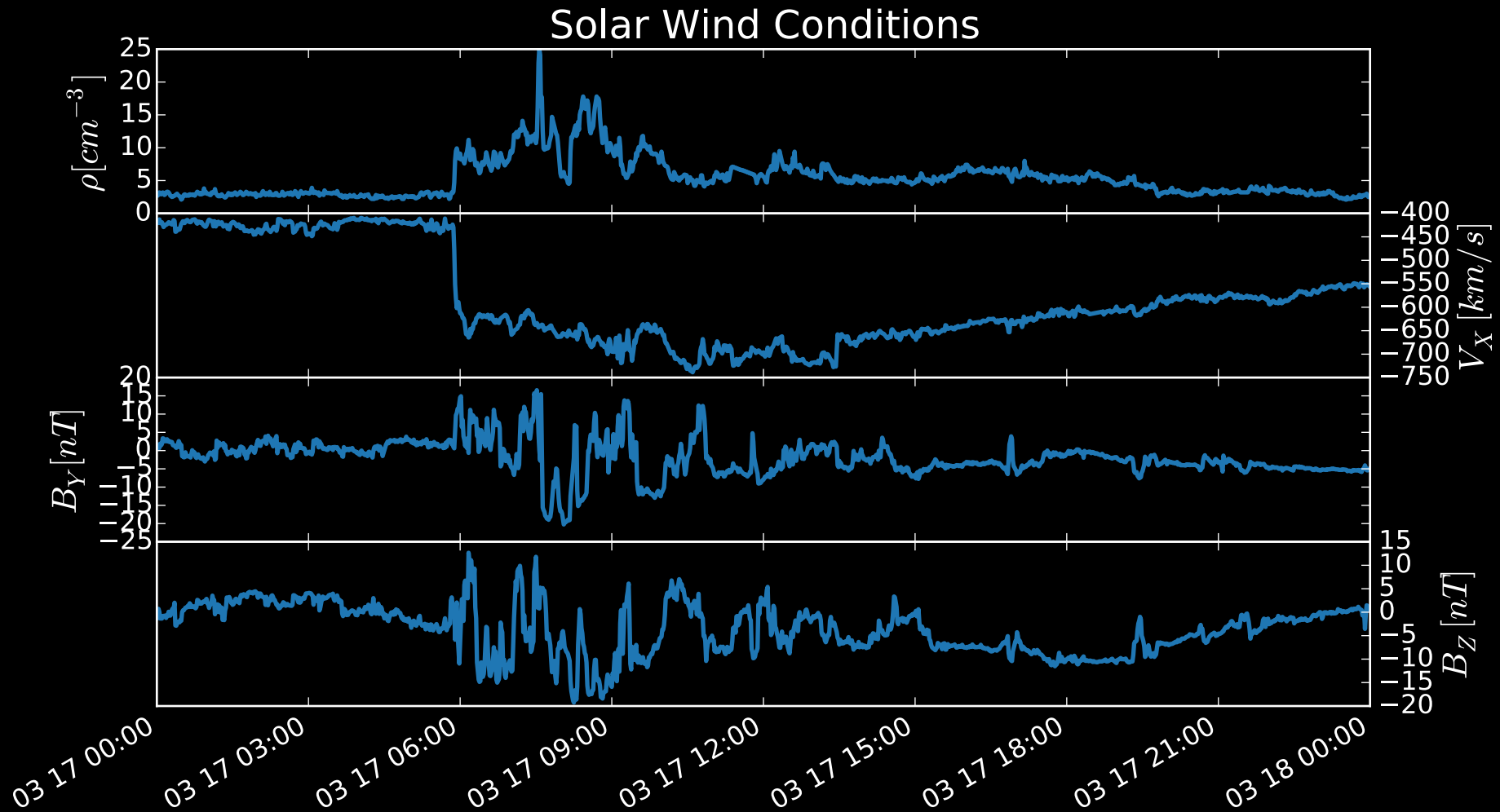
- May be a key missing component in the conductance during strong driving.

# Conductance corrections

- Based on theory and PIC simulations of ionospheric turbulence. More accurate parameterization effort is underway.

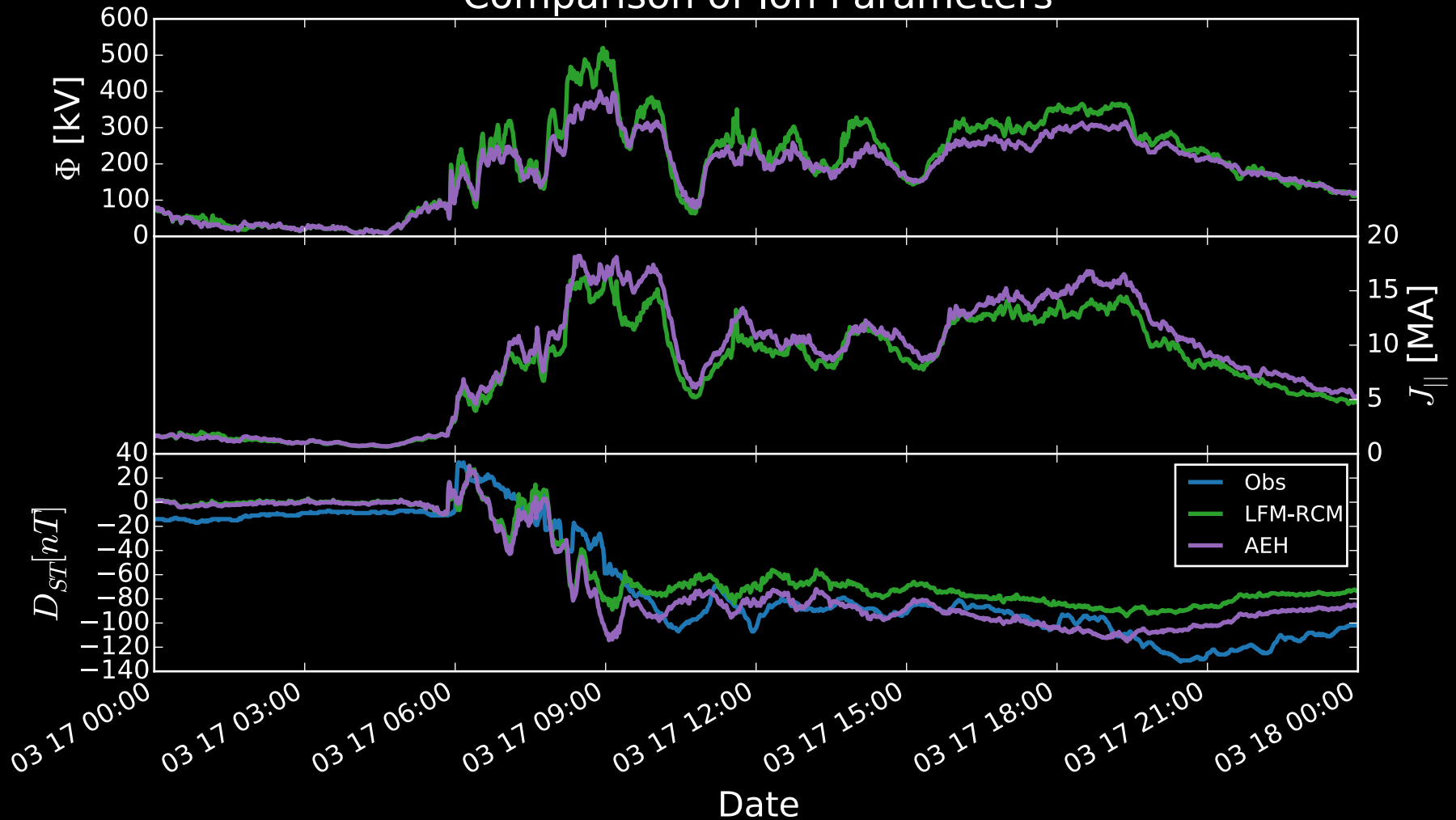


# 17 March 2013 Solar Wind Conditions



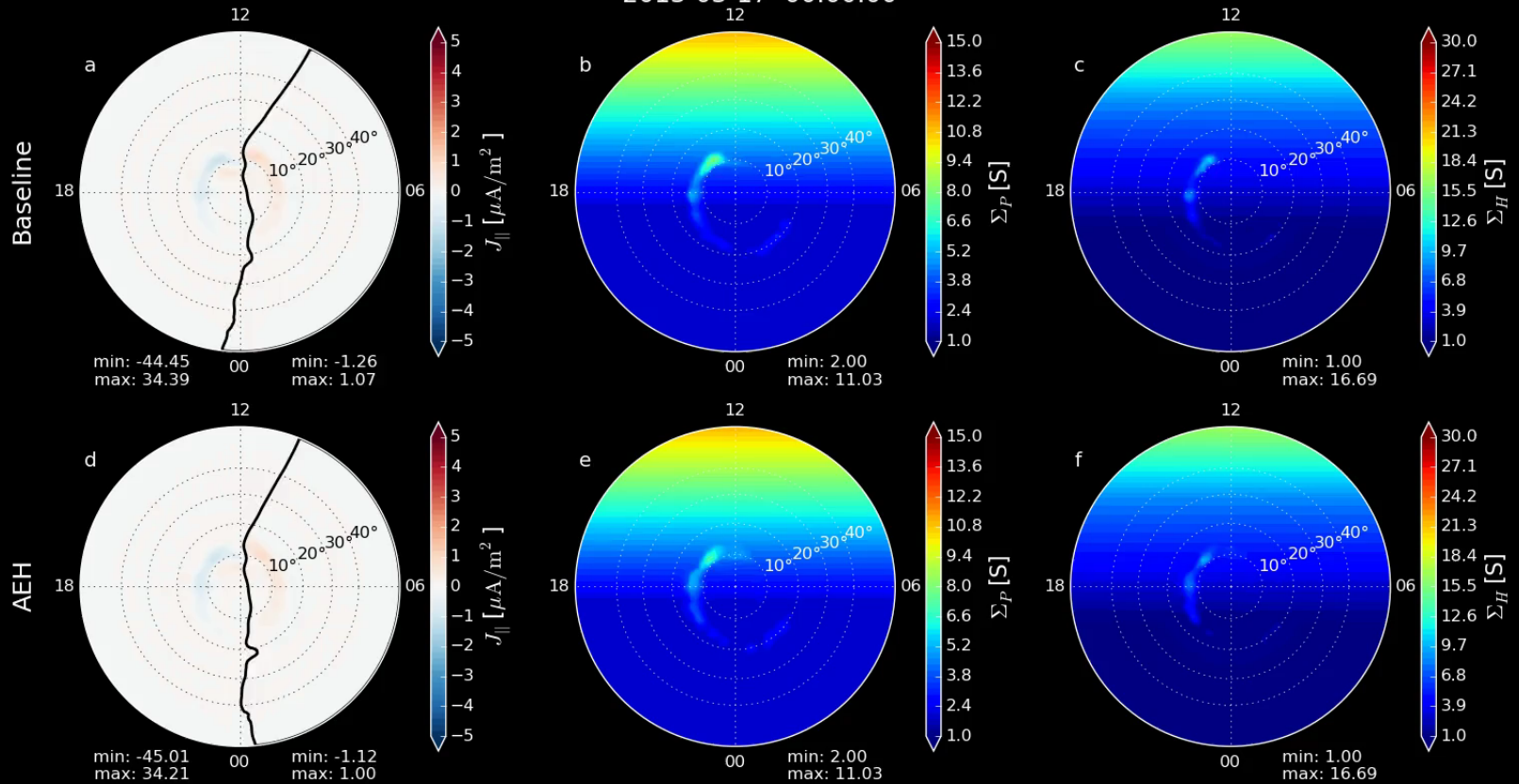
# Ion Summary

## Comparison of Ion Parameters



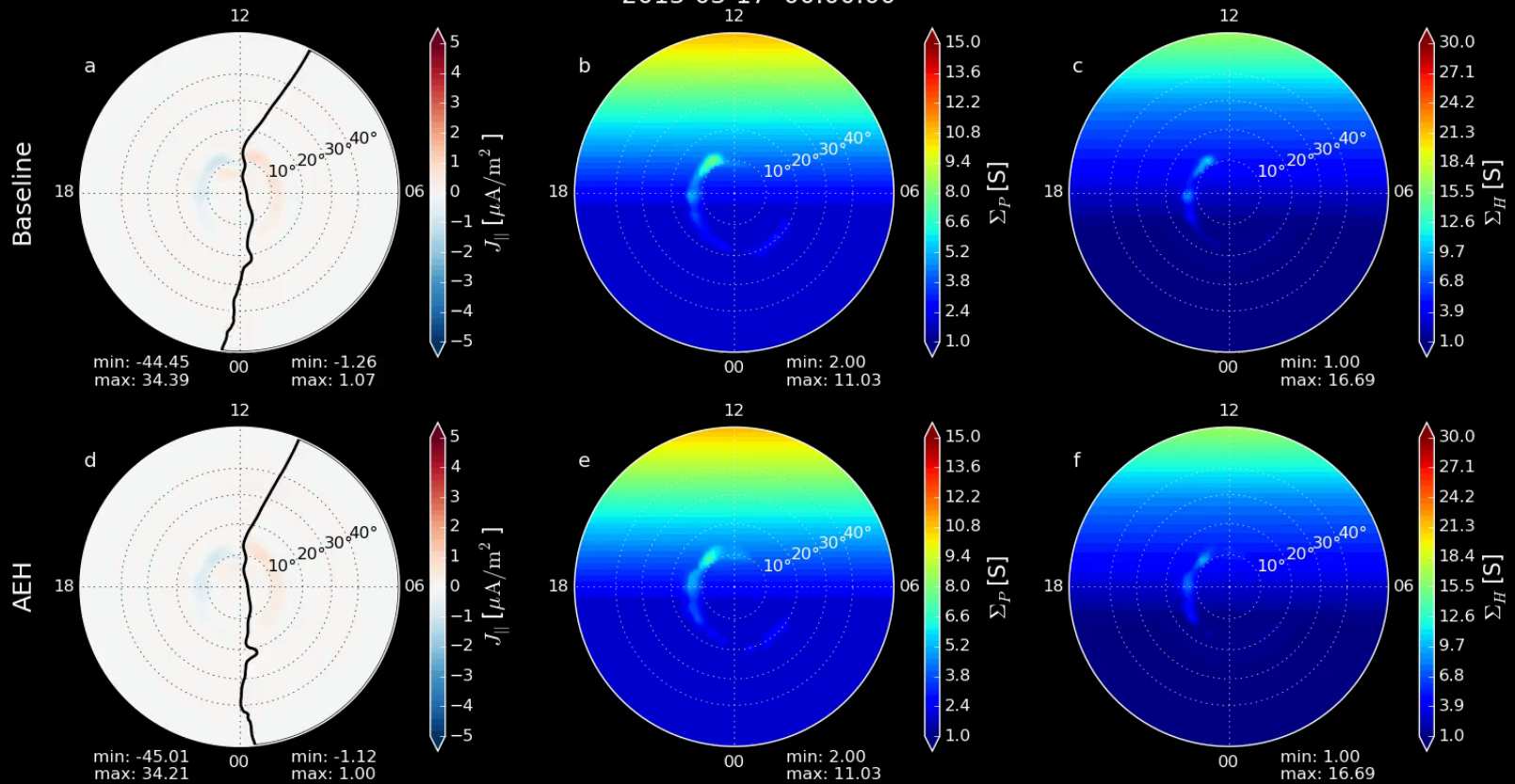
# LFM-RCM Ion Patterns

Comparisons of Ionospheric Parameters  
2013-03-17 00:00:00



# LFM-RCM Ion Patterns

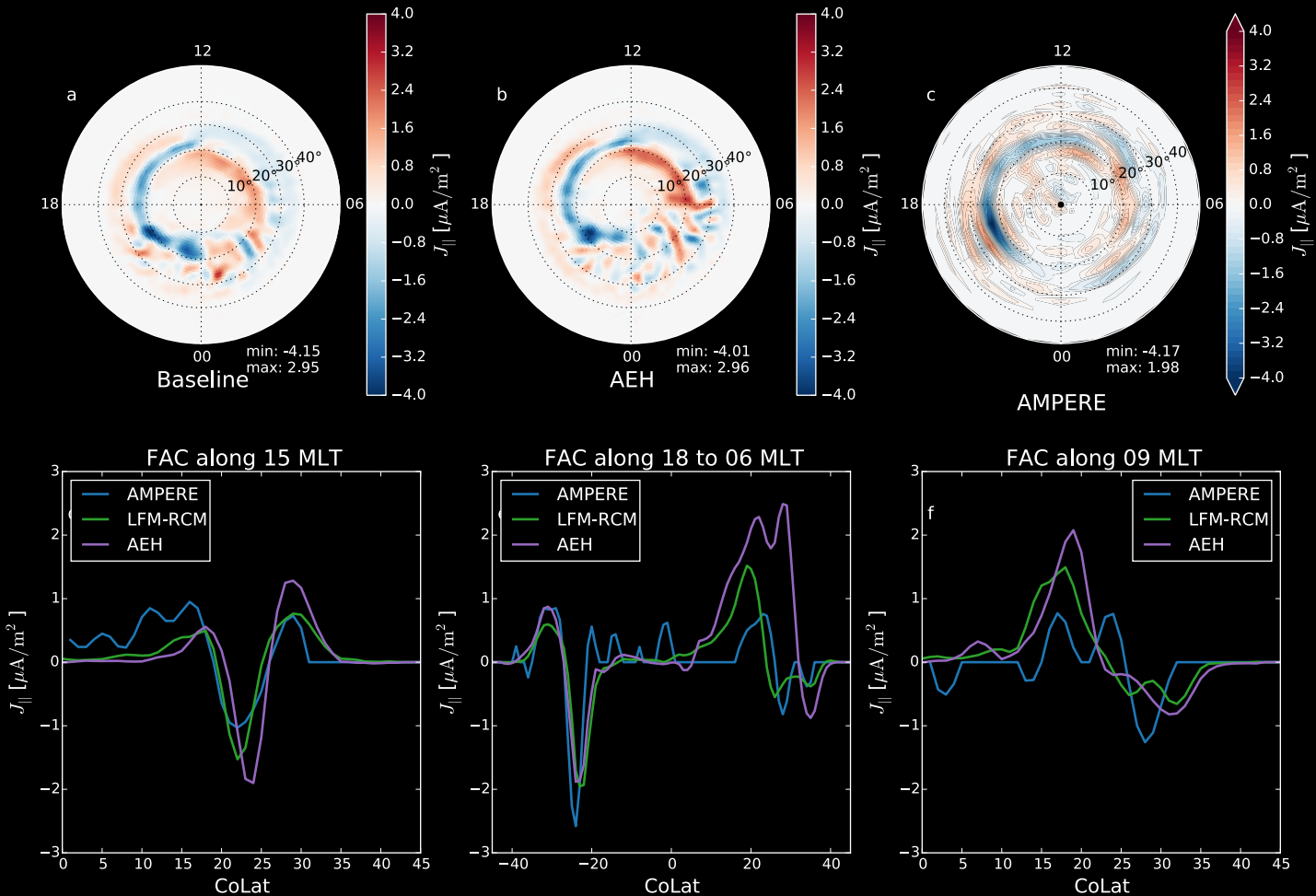
Comparisons of Ionospheric Parameters  
2013-03-17 00:00:00





# AMPERE Comparison

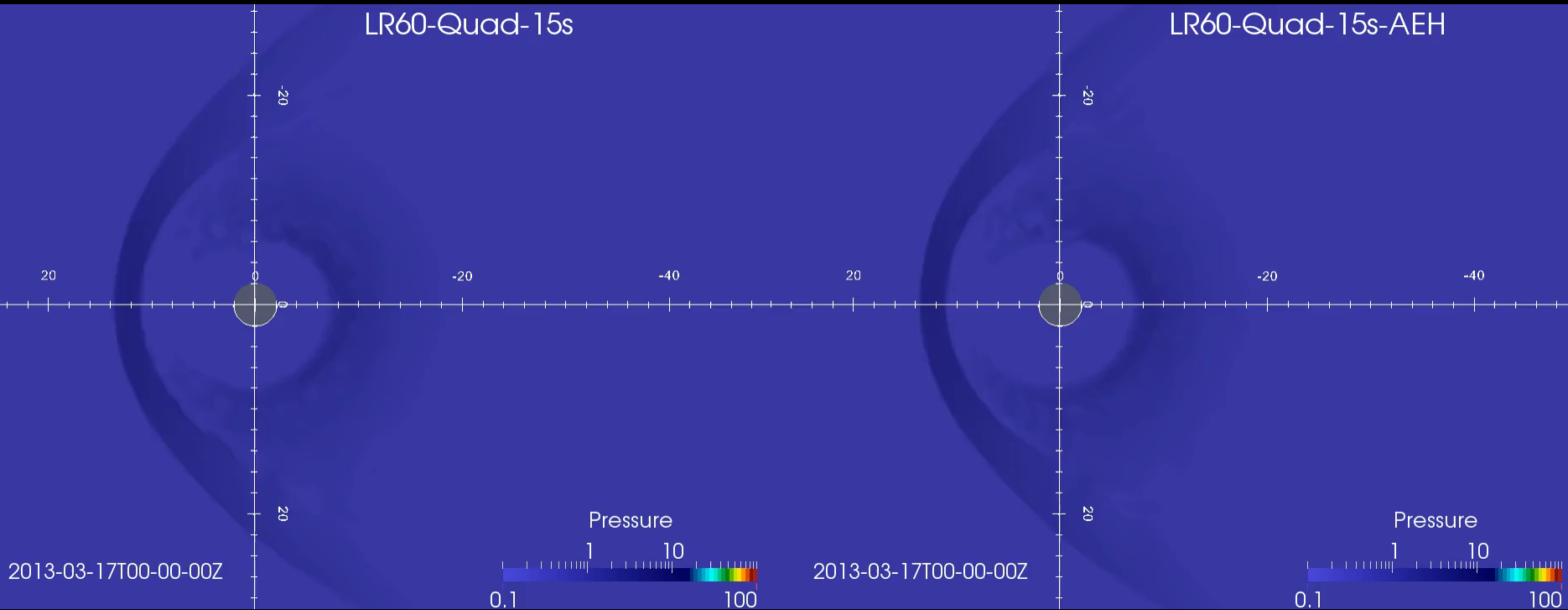
Comparisons of FAC Patterns  
2013-03-17 10:00:00



# Ring Current Distribution

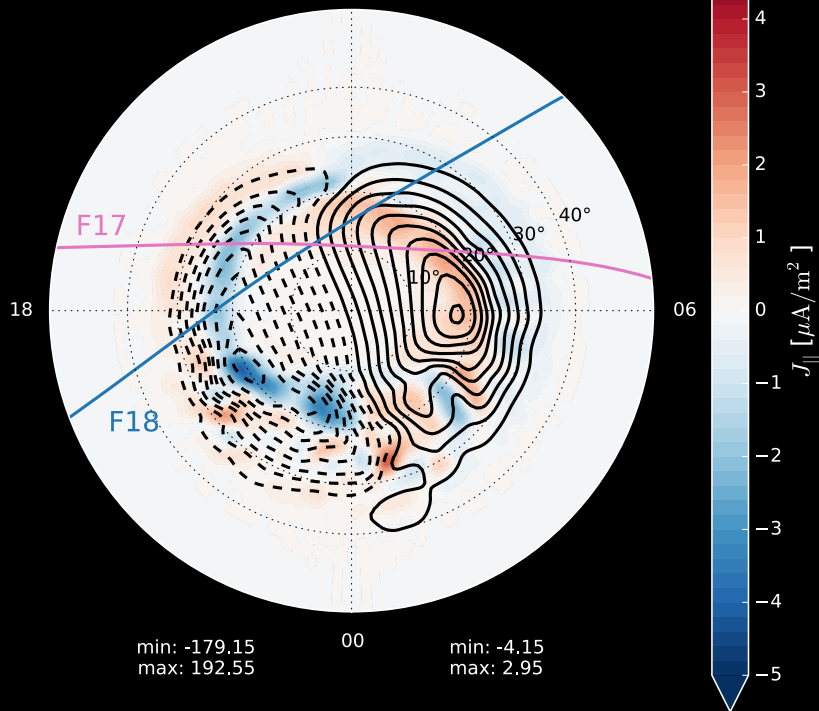
LR60-Quad-15s

LR60-Quad-15s-AEH

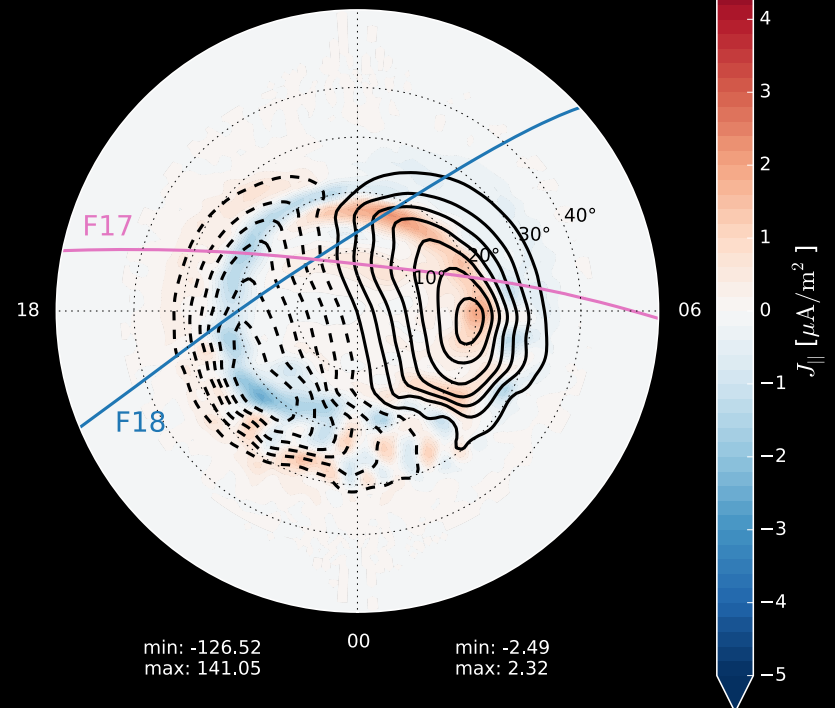


# DSMP Passes

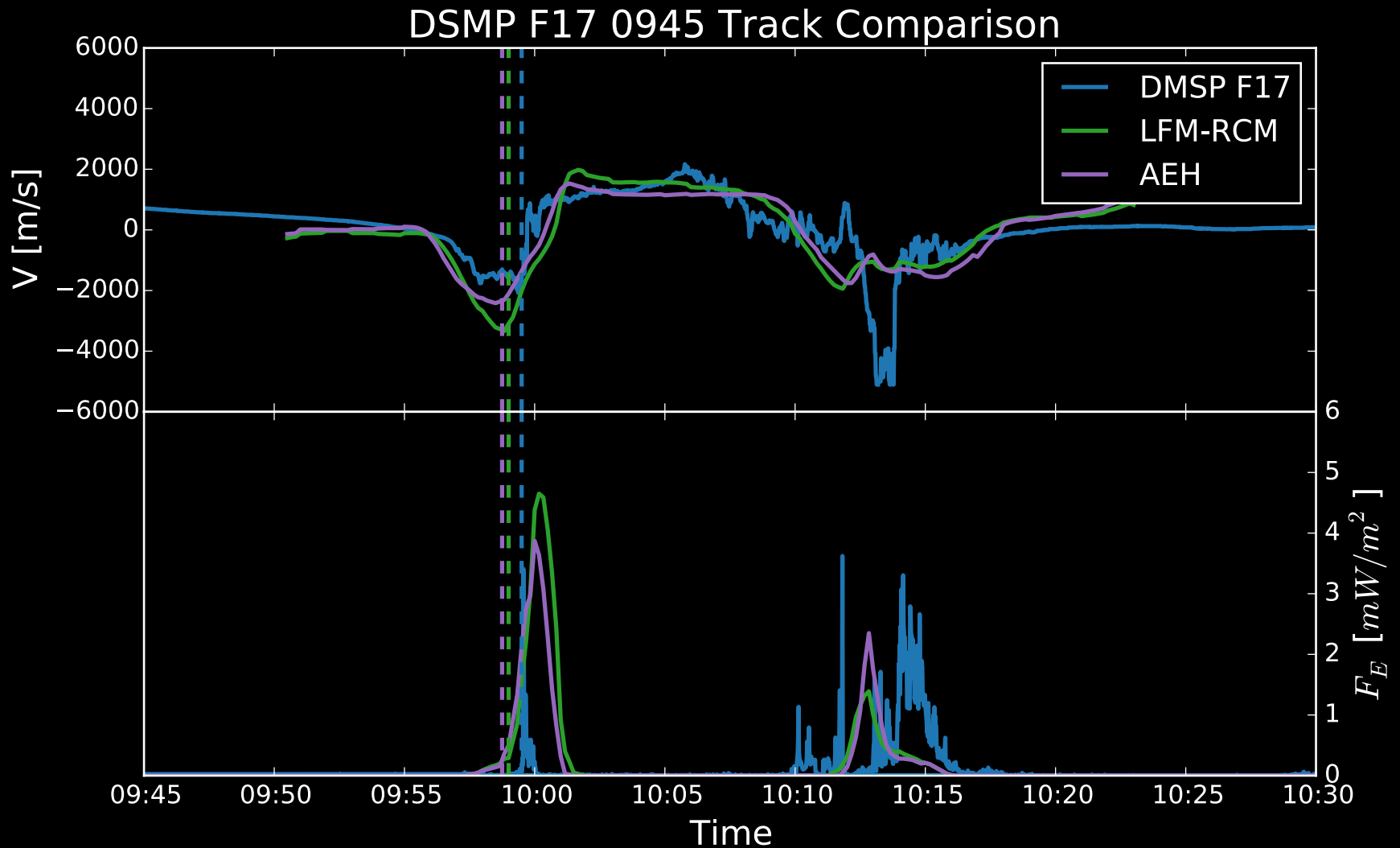
DSMP Tracks and AEH Results  
2013-03-17 10:00:00



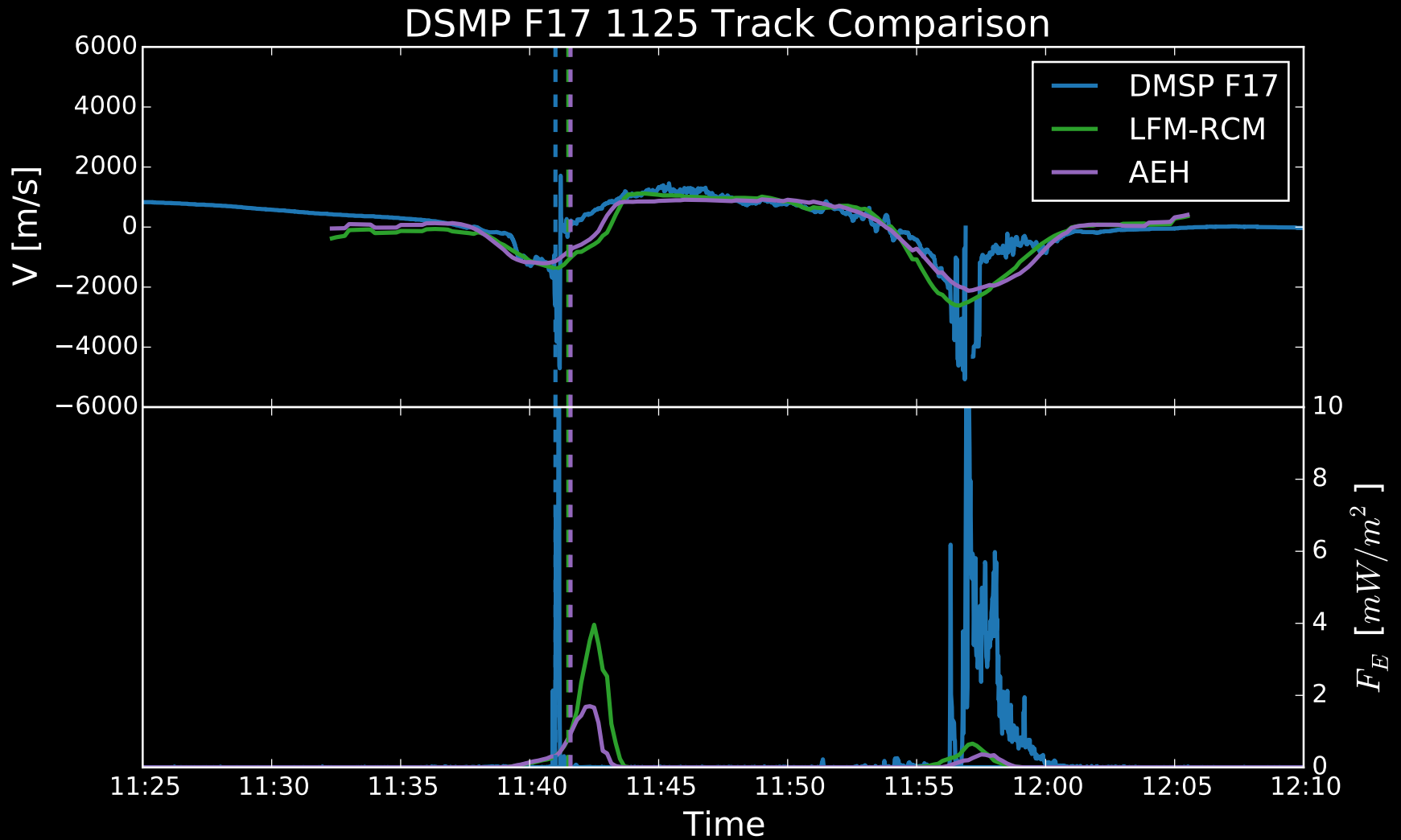
DSMP Tracks and AEH Results  
2013-03-17 12:00:00



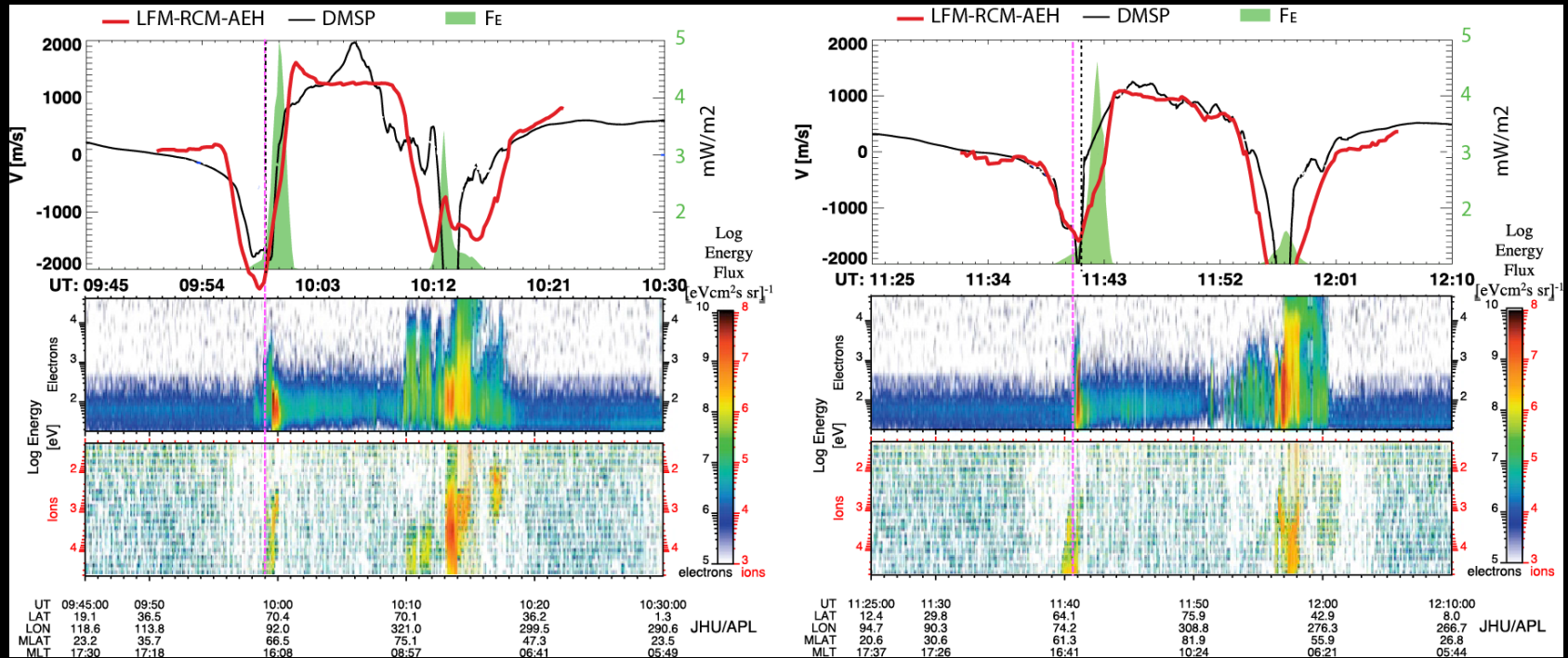
# DSMP F17 Comparison



# DSMP F17 Comparison



# DSMP F17 Comparison



# DSMP F18 Comparison

