

[Space Weather]

Supporting Information for

Assessment of using field-aligned currents to drive the Global Ionosphere Thermosphere Model: A case study for the 2013 St Patrick's Day geomagnetic storm

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Introduction

Figures S1 and S2 show the comparisons of the cross-track ion drifts along the DMSP F17 and F18 satellite polar crossings in the NH and SH. Movie S1 shows the comparisons of the high-latitude electric potential, total electron energy flux and height-integrated Joule heating between the AMIE-driven and FAC-AMIE simulations at different UTs on 03/17.

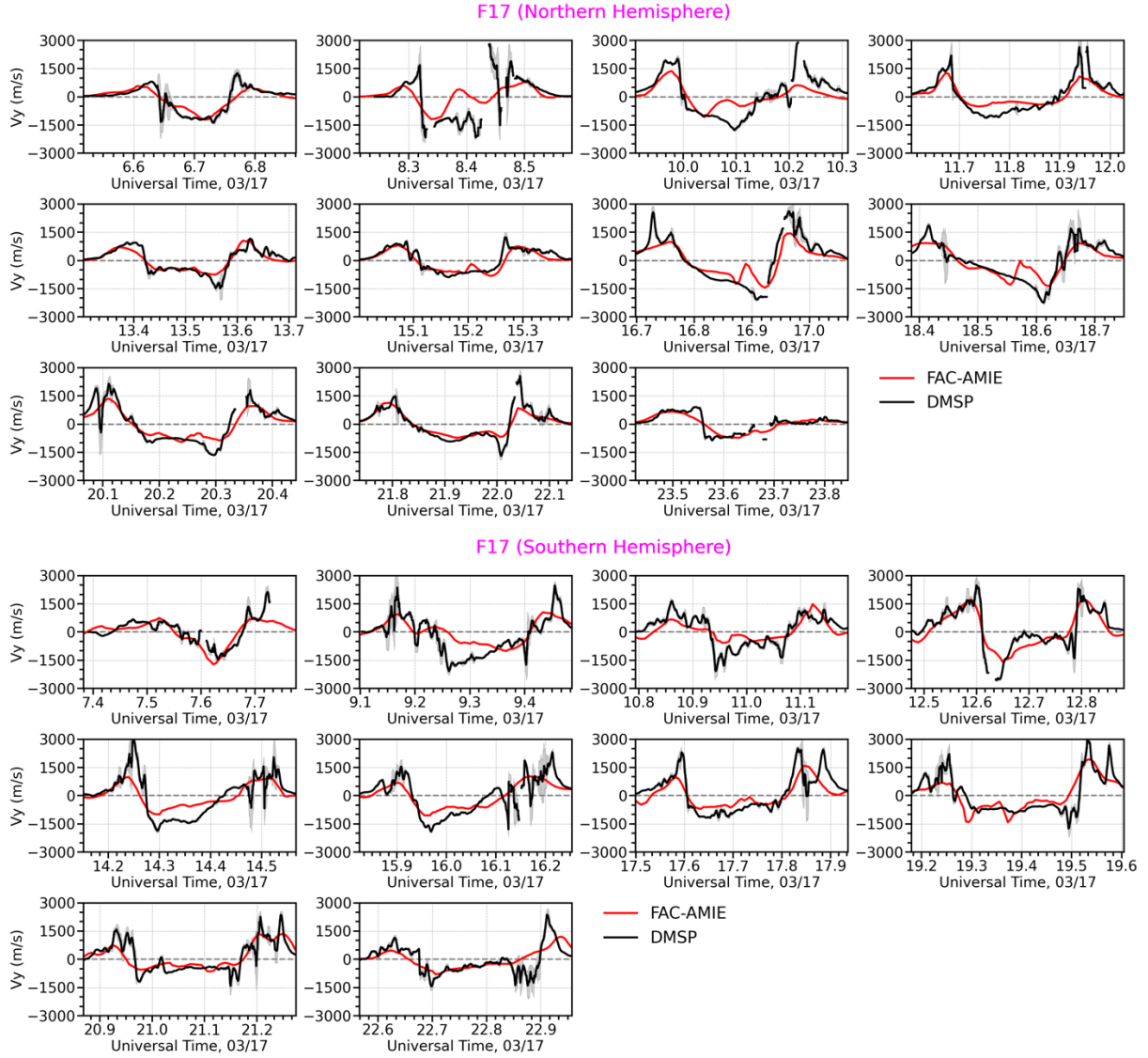


Figure S1. Comparisons of the cross-track ion drifts along the DMSP F17 polar crossings in the NH and SH. In each plot, black and red lines represent the DMSP measurement and FAC-AMIE simulation result, respectively.

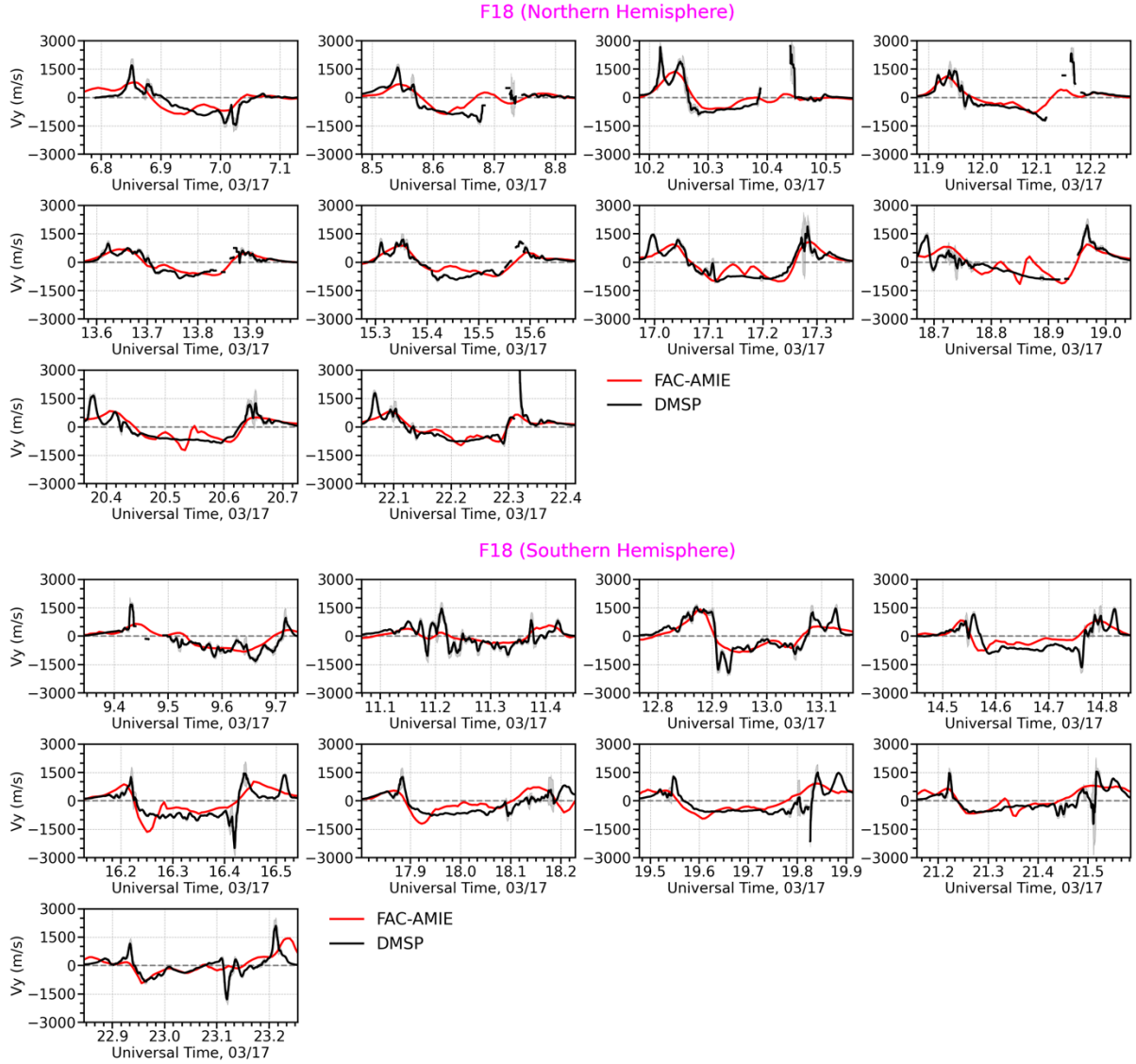


Figure S2. Same as Figure S1 but for the DMSP F18 satellite

Movie S1. Distributions of the electric potential, total electron energy flux and height-integrated Joule heating from the AMIE-driven simulation (left two columns) and FAC-AMIE simulation (right two columns) at different UTs on 03/17. The first and third rows correspond to outputs in the Northern Hemisphere while the second and fourth rows correspond to outputs in the Southern Hemisphere. For each plot, the minimum and maximum of the corresponding parameter are labelled at the bottom left and right of the plot, respectively. The value at the top left of each plot in the bottom two rows represents the hemispheric integrated value.