Supporting Information for "Reconnection-driven Dynamics at Ganymede's Upstream Magnetosphere: 3D Global Hall MHD and MHD-EPIC Simulations"

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1. Movies S1 to S4

Additional Supporting Information (Files uploaded separately)

1. Captions for Movies S1 to S4

Introduction

Four movies of MP4 format are attached. They demonstrate the plasma pressure and velocity V_L component in the LMN coordinate system color contours on the surface of Ganymede's magnetopause defined by $B_z = 0$ during the G8 flyby upstream condition. The simulation data are obtained from the Hall MHD and MHD-EPIC simulations described in the paper, and processed with SWMF.jl (https://github.com/henry2004y/SWMF.jl) package and ParaView 5.7.

P_Hall.mp4

The pressure contour on the magnetopause for the 20-min Hall MHD simulation.

P_PIC.mp4

The pressure contour on the magnetopause for the 20-min MHD-EPIC simulation.

VL_hall.mp4

The velocity V_L contour on the magnetopause for the 20-min Hall MHD simulation.

VL_pic.mp4

The velocity V_L contour on the magnetopause for the 20-min MHD-EPIC simulation.