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Satellite observations of lower-hybrid-oscillated magnetic null and related anomalous resistivity CHIJIE XIAO, XIAOGANG WANG, School of Physics, Peking University, ZUYIN PU, School of Earth and Space Sciences, Peking University — Here we report two 3D fast reconnection events with magnetic nulls, one located in the geomagnetotail and the other one in dayside magnetopause. The magnetic nulls in both events are oscillated at lower-hybrid frequencies, which imply that lower-hybrid wave may be very important at the center of reconnection current sheet. The power spectrum of the electric field around the lower-hybrid (LH) frequency is measured to compute the anomalous resistivity near the magnetic null. The anomalous resistivity due to lower-hybrid frequency turbulence is in comparison with the effective resistivity calculated from electrical field and current data. Also the fast reconnection rate is estimated from magnetic field and flow data to compare with the reconnection electrical field computed from the current data and anomalous resistivity calculation. It is found that, the anomalous resistivity induced by LH frequency turbulence is sufficient to trigger fast reconnection.

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