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# Estimation of the magnetotail reconnection parameters from a remote lobe observation by ARTEMIS spacecraft

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A method that estimates the reconnection parameters, such as the location of reconnection region and the reconnected magnetic flux, from the field and the flow disturbances in the lobe is applied for a substorm event on 15 February 2010 at 08:40 UT. The method is based on the time-dependent reconnection model considering a reconnection line with a finite length along the current direction and assumes that the disturbances associated with the reconnection propagate parallel to the current sheet with a constant Alfvén velocity. Using ARTEMIS observations, which showed characteristic variations of the magnetic field detected on probe P2 located at X= -43 RE, Y=-11.2 Re, and Z= -6.9 RE in GSM coordinates, we estimate the reconnection region to be located at X=-26.9 RE, Y=3.5 RE, and Z=0 RE. This is consistent with the local time of the current wedge that was reconstructed for the event using low latitude magnetogram data. The reconnected magnetic flux is obtained to be 4.1 - 5.3 MWb.