



Flat-top electron distributions and wave activities observed near a tailward dipolarization front

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Electron flat-top distributions are observed by ARTEMIS spacecraft at ~ 55 Re in the magnetotail near a tailward dipolarization front. These electrons are observed inside a high-speed flow behind the front, occupied a region narrow than the flow channel. The distribution can be classified into three different types relative to the location of the front. Wave activities are also observed together with the appearance of the electron flat-top distributions. These waves are similar to the whistler mode waves, which appear at the local minimum of the fluctuating total magnetic and electric field. Fast flows and associated dipolarization front are believed to be associated with reconnection processes, and the observed electron distribution seems agree with the scenario. The possible forming mechanism and the relations between the wave activities and the electron distribution are discussed.