

## Two satellite observations of precipitating electrons associated with auroral breakup

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We compare auroral electrons several minutes before and after an auroral breakup. The electrons were observed by the FAST and DMSP satellites near the breakup location. The breakup was identified in global images taken by the Polar satellite at 1957:50 UT on 10 November 1999. FAST passed the breakup location 6 min before the breakup and observed diffuse electrons with energy around 10 keV. The diffuse electrons were accompanied by broadband electrons below 1 keV, which are supposed to be associated with Alfvén waves. Seven min after the breakup, a DMSP satellite crossed the onset arc. DMSP observed inverted-V type electrons at the surge horn, which was 15 deg west of the initial breakup location. In summary, the onset arc corresponded to diffuse electrons with broadband electrons before breakup, and to inverted-V electrons after breakup. It is thus suggested that the evolution of diffuse electrons to inverted-V electrons is associated with waves.

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