

Statistical analysis of auroral breakups during magnetic storm

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On average, auroral breakups typically initiate near 67deg magnetic latitude (MLAT) and in the pre-midnight region (23 hour in magnetic local time (MLT)). We statistically studied locations of auroral breakups during magnetic storms.

Auroral breakups were identified using global images taken by the ultraviolet imager onboard Polar satellite. We divided auroral breakups into storm-time events and other events, and then studied their differences. We identified magnetic storms with using Sym-H geomagnetic index and the sudden commencement(SC).

Our results show that auroral breakups occur at later MLT during the storm main phase than during other phases. This result is supported by preliminary studies of associations between the interplanetary magnetic field and breakups MLT.

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