Pulsating auroras observed by a 30-Hz all-sky imager during the THEMIS-ground campaign

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We had an auroral observation campaign at Gillam (56.4N, 265.4E) and Fort Smith (60.0N, 248.1E), Canada on January 2-15, 2008, using all-sky imagers (ASIs) (180 degree field of view (FOV)) with a sampling rate of 30 Hz and narrow FOV cameras (˜50 degree FOV) with a sampling rate of ˜1 s. At ˜1100 UT on 14 January, weak auroral breakup took place at the westside in the FOV of the white-light ASI at Gillam. After the breakup, active pulsating aurora was observed by ASI over all sky in the FOV during 1100-1150 UT. Time period of the pulsation was shorter than 1 s. The narrow FOV camera observed fine structures of the pulsating aurora nearly along the magnetic field line. During this pulsating aurora event, the THEMIS-P2 satellite crossed near the conjugate region at ˜5 Re in the plasma sheet. Similar THEMIS-ground conjunction event of pulsating aurora was obtained on 12 January at Gillam, during which the ASI observed active pulsating aurora lasted for 1 h. In this presentation, we show overview of the pulsating auroras using ground and satellite observations and discuss formation process of the pulsating aurora.