



Field line resonance trigger auroral arcs identified by ground and multi-spacecraft in the near-Earth magnetotail

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Data from satellite THEMIS, GOES11, GOES12, and ground-based magnetometers are used to investigate characteristics of field line resonance (FLR) in ionosphere and the plasma sheet. The Pc3/Pc4 waves observed by CARISMA array show the signatures of field line resonance during 0400~0500 UT on March 9, 2009. The FLR occurred narrowly in latitude band and wide in longitude. A large amplitude Pc3/Pc4 ULF waves were observed by the THEMIS-A (P5) and GOES11 satellites near equator in the near-Earth magnetotail on March 9, 2008. P5 was located in $X \sim -5$ Re. Firstly P5 detected a compressional wave, then a shear Alfvén wave. The Alfvén wave could accelerate the electron to precipitate into the footprint of P5, resulted in the discrete auroral arcs.