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C 会場 ：11/5　PM2 （15:45-18:15）
16:15〜16:30

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Characteristics of temporal evolution of the 2-D distribution of soft electron precipitation near the nightside polar cap boundary

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Strong low-energy electron precipitation often occurs near the polar cap boundary on the night side. This is believed to be related to Alfvenic electron acceleration, which is also known to produce tall red auroras. Satellite observations have revealed the detailed energy distribution of that low-energy electron precipitation and its spatial characteristics. However, how the low-energy component of the electron precipitation grows and decays near the nightside polar cap boundary is still unknown. To understand the temporal characteristics of the low-energy electron flux near the nightside polar cap boundary, we devised an automated method to determine the 2-D distributions of low-energy electron flux by comparing 630-nm auroral image data from an all-sky imager (located at Longyearbyen, Svalbard) with 630-nm emission distributions calculated by the Global Airglow model. We also validated the usefulness of this automated method based on simultaneous observations by the DMSP satellite and the all-sky imager. We have applied this method to a number of 630-nm auroral image data obtained near the polar cap boundary on the night side. We report on the characteristics of the temporal evolution of the horizontal 2-D distribution of low-energy electron flux, especially focusing on the speed at which high flux areas move, and discuss how these characteristics are produced.