Characteristic distance between mesoscale auroral brightenings along the equatorward boundary of the cusp

*小瀬 智史¹、田口 聡¹、細川 敬祐²
*Satoshi Kose¹, Satoshi Taguchi¹, Keisuke Hosokawa²

1. 京都大学大学院理学研究科地球惑星科学専攻地球物理学教室、2. 電気通信大学大学院情報理工学研究科
1. Department of Geophysics, Graduate School of Science, Kyoto University, 2. Department of Communication Engineering and Informatics, University of Electro-Communications

Each auroral brightening event near the equatorward boundary of the cusp is thought to be the ionospheric signature of the beginning of intermittent reconnection on the dayside magnetopause, i.e., a flux transfer event. In order to understand whether two neighboring flux transfer events occur at intervals of any characteristic length scales, we examined mesoscale auroral brightenings that occur near the equatorward boundary of the cusp by analyzing 630-nm auroral image data obtained from an all-sky imager at Longyearbyen, Svalbard. Statistical analyses of the distributions of the mesoscale auroral brightenings for stable southward IMF show that two mesoscale auroral brightenings tend to occur approximately at 0.4-hour MLT intervals. We discuss this distance at ionospheric heights in terms of the formation of the flux transfer events on the dayside magnetopause.

キーワード：cusp、aurora、electron precipitation、reconnection
Keywords: cusp, aurora, electron precipitation, reconnection