Soft-X ray emissions from Geospace: Possible science objectives of GEO-X

*Yoshizumi Miyoshi[1], Yosuke Matsumoto[2], Yuichiro Ezoe[3]

1. Institute for Space-Earth Environmental Research, Nagoya University, 2. Chiba University, 3. Tokyo Metropolitan University

Recent studies have indicated that charge-exchange between geocorona and On+ ions of the solar wind causes the soft-X ray emission. The soft-X ray emission can be used as a tool to measure global topology of Geospace. In order to investigate how we can observe the soft-X ray emissions, we conduct a computer simulation by a code coupling of the global magnetospheric MHD simulation model (Matsumoto+, 2010) and empirical geocorona model. The simulation shows clear emissions from the dayside sheath region as well as the cusp region. The new satellite project GEO-X has been proposed to measure the soft-X ray emission through solar wind charge exchange (SWCX) from the dayside magnetosphere. In this presentation, we show the possible soft-X ray images by the computer simulation, by considering the GEO-X satellite orbit.

Keywords: solar wind-magnetosphere coupling, soft-Xray emissions

