

[2-15]

## DYNAMICS OF IONOSPHERIC CONVECTION ASSOCIATED WITH LOW LATITUDE AURORA IN HOKKAIDO DURING THE MARCH 2015 STORM

*\*<sup>1</sup>N. Nishitani, <sup>2</sup>T. Hori, <sup>3</sup>R. Kataoka, <sup>4</sup>Y. Ebihara, <sup>5</sup>K. Shiokawa, <sup>6</sup>Y. Otsuka, and <sup>7</sup>H. Suzuki*

*\*<sup>1</sup>Solar-Terrestrial Environment Laboratory, Nagoya University, Nagoya, Aichi 464-8601, Japan  
Email: nisitani@stelab.nagoay-u.ac.jp*

*<sup>2</sup>Solar-Terrestrial Environment Laboratory, Nagoya University, Nagoya, Aichi 464-8601, Japan  
Email: tomo.hori@nagoya-u.jp*

*<sup>3</sup>National Institute of Polar Research, Tachikawa, Tokyo 190-8518, Japan  
Email: ryuho.kataoka@gmail.com*

*<sup>4</sup>Research Institute for Sustainable Humanosphere, Kyoto University, Uji, Kyoto 611-0011, Japan  
Email: ebihara@rish.kyoto-u.ac.jp*

*<sup>5</sup>Solar-Terrestrial Environment Laboratory, Nagoya University, Nagoya, Aichi 464-8601, Japan  
Email: shiokawa@stelab.nagoay-u.ac.jp*

*<sup>6</sup>Solar-Terrestrial Environment Laboratory, Nagoya University, Nagoya, Aichi 464-8601, Japan  
Email: otsuka@stelab.nagoay-u.ac.jp*

*<sup>7</sup>Department of Physics, Meiji University, Kawasaki, Kanagawa 214-8571, Japan  
Email: suzhide@meiji.ac.jp*

The 2015 March storm (St. Patrick's Day storm), which occurred during 17-21 March 2015, is the largest one during Solar Cycle 24 for now. During the main phase of the storm (minimum Dst=-223 nT), optical instruments installed at Rikubetsu, Hokkaido, Japan (geomagnetic altitude: 36.5 degs) registered auroral emissions during 15 to 19 UT (corresponding to 00 to 04 LT) on March 17. In addition, both the SuperDARN Hokkaido East and West radars succeeded in obtaining unprecedented set of high-time-resolution (1 to 2 mins) ionospheric convection data associated with the low latitude aurora up to below 50 degs geomagnetic latitude. It is found that the initial stage of the low latitude aurora appearance (before 1630 UT) was associated with equatorward convective flow, and later there was sheared flow structure, consisting of westward flow (about 500 m/s) equatorward of eastward flow (about 1000 m/s), with the equatorward boundary of auroral emission embedded in the westward flow region. Details of the data analysis results and their interpretation will be presented. Preliminary report on the NLC event in Japan at 17-18 UT on June 20, just before the June 2015 storm event, will also be presented.