

# Japan Geoscience Union Meeting 2011

(May 22-27 2011 at Makuhari, Chiba, Japan)

©2011. Japan Geoscience Union. All Rights Reserved.



PCG033-P01

Room:Convention Hall

Time:May 24 14:00-16:30

## A modeling of Titan's ionosphere

kei nakaoka<sup>1\*</sup>, Shigeto Watanabe<sup>1</sup>, Shotaro Sakai<sup>1</sup>

<sup>1</sup>Dep. CosmoSciences. Hokkaido Univ.

A modeling of Titan's ionosphere

K. Nakaoka(1), S. Watanabe(1), S. Sakai(1)

(1) Department of CosmoSciences, Graduate School of Sciences, Hokkaido University

The Langmuir Probe (LP) onboard Cassini spacecraft has obtained that the ion mass is about 20 -40 amu at altitudes from 1200km to 1800km and exceeds 60 amu at ~1200 km altitude (Wahlund et. al., 2005). However, the ion composition has not been understood yet.

We constructed an ion composition model in the Titan's upper atmosphere which consists of nitrogen and methane. The result shows that the main ions are protonated hydrogen cyanide and protonated ethylene. The altitude of peak number density is ~1100 km. We report the comparison between the modeling and the Cassini observation and photochemical processes in the Titan's upper atmosphere.

Keywords: titan, upper atmosphere, ion composition, altitude distribution, ionosphere