

Van Allen Probes によってリングカレント領域で観測された周期的なイオンフラックスの変動
 Periodic Ion Flux Modulation observed by Van Allen Probes in Ring Current Region

*山本 和弘¹、能勢 正仁²、Kletzing Craig³、Smith Charles⁴、MacDowall Robert⁵、Spence Harlan⁴、Reeves Geoff^{6,7}、Larsen Brian^{6,7}

*Kazuhiro Yamamoto¹、Masahito Nose²、Craig Kletzing³、Charles Smith⁴、Robert MacDowall⁵、Harlan Spence⁴、Geoff Reeves^{6,7}、Brian Larsen^{6,7}

1.京都大学大学院理学研究科、2.京都大学大学院理学研究科附属地磁気世界資料解析センター、3.アイオワ大学、4.ニューハンプシャー大学、5.ゴダード宇宙飛行センター、6.ロスアラモス国立研究所、7.ニューメキシココンソーシアム

1.Graduate School of Science, Kyoto University, 2.Data Analysis Center for Geomagnetism and Space Magnetism, Graduate School of Science, Kyoto University, 3.Department of Physics and Astronomy, University of Iowa, 4.Institute for the Study of Earth, Oceans and Space, University of New Hampshire, 5.Solar System Exploration Division, Goddard Space Flight Center, 6.Space Sciences and Applications Group, Los Alamos National Laboratory, 7.Space Sciences Division, The New Mexico Consortium

In the drift-bounce resonance that was theoretically introduced by *Southwood et al.* [1969], the interaction is expected between ULF waves and electrons or ions. Through the interaction, charged particles in the ring current can be accelerated or decelerated and the population of ring current particles can be changed. There are many observations of drift-bounce resonance for protons [e.g., *Kokubun et al.*, 1977; *Takahashi et al.*, 1990; *Dai et al.*, 2013], whereas only a few observations of drift-bounce resonance are reported for O⁺ ions [*Yang et al.*, 2010, 2011]. In this study, we report several events of periodic flux modulation of protons and O⁺ ions observed by Van Allen Probes in 2012-2016. We find periodic flux modulation of O⁺ ions and Pc5 waves on November 4, 2015 (event A) and November 30, 2015 (event B). In event A, the flux modulation is recognized at 1-50 keV and dispersed in energy. In event B, however, the flux modulation is limited at ~10 keV. We will examine dependence of the flux variations on pitch angles and energies, and discuss if the variations are due to drift-bounce resonance.

キーワード：波動粒子相互作用、ドリフトバウンスレゾナンス、地磁気脈動、酸素イオン、リングカレント、Van Allen Probes

Keywords: wave-particle interaction, drift-bounce resonance, geomagnetic pulsations, oxygen ions, ring current, Van Allen Probes

