

Abstract Submitted
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High beta plasma observations in Earth's inner magnetosphere: Waves and particle oscillations, and drift-mirror instability. A. RUALDO SOTO CHAVEZ, LOUIS J. LANZEROTTI, ROSS COHEN, ANDREW GERARD, Center for Solar-Terrestrial Research, New Jersey Institute of Technology, JERRY W. MANWEILER, Fundamental Technologies, LLC, Lawrence, KS, USA. — We report on high beta (> 1) plasma observations made by the RBSPICE instruments onboard the Van Allen Probes spacecraft. The data presented covers almost two years of continuous measurements (March 9, 2013 to December 31, 2014). This coverage provides an unprecedented opportunity to identify and characterize high-beta plasma occurrences in the inner magnetosphere and their characteristics. It is known that high-beta events involve complex plasma physics dynamics. These events can also have global effects on Earth's magnetosphere. Here we show that on July 6, 2013 (one of many high-beta events) a Pc5 (~ 2.5 min period) wave was locally generated in the magnetosphere through the drift-mirror instability. We describe the wave characteristics and its effects on particle modulations, specifically ring current ions (~ 50 -500 keV).

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