HYDROMAGNETIC WAVE EVENT IN THE JOVIAN MAGNETOSPHERE

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Abstract

We report measurements of energetic particle (>50 keV ions and electrons) modulations during an unique hydromagnetic wave event observed inside the Jovian magnetosphere. This wave event, recorded by the magnetometer instrument on the ULYSSES spacecraft, occurred during the high latitude outbound pass in the dusk sector of the planet. During the wave event the spacecraft was at distances between 65 and 68 RJ and at southern magnetic latitudes of 27-32 degrees. We show that the approximately five minute oscillations in the north-south component of the magnetic field are well correlated only with variations in the energetic particle fluxes at small pitch angles. We discuss this first possible evidence for wave-particle interactions inside the Jovian magnetosphere and compare the results with similar observations reported in the Earth magnetosphere.