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ULF waves in Ganymede's magnetosphere

M. Volwerk (1), X. Jia (2), C. Paranicas (3), W. S. Kurth (4), M. G. Kivelson (5), and K. K. Khurana (5)

(1) Austrian Academy of Sciences, IWF Graz, Graz, Austria (martin.volwerk@oeaw.ac.at), (2) Dept. of Atmospheric, Oceanic and Space Sciences, University of Michigan, Ann Arbor, USA, (3) The Johns Hopkins University Applied Physics Laboratory, Laurel, MD, USA, (4) Department of Physics and Astronomy, University of Iowa, Iowa City, USA, (5) Institute of Geophysics and Planetary Physics, UCLA, Los Angeles, USA

Ganymede's magnetosphere is continually interacts with the Jupiter's corotating magnetosphere. As Ganymede's and Jupiter's magnetic fields are oppositely directed, bursty magnetic reconnection is happening on the upstream side of the moon. This reconnection can be an energy source for ULF waves in Ganymede's magnetosphere. During Galileo's G8 flyby, the spacecraft entered into the moon's magnetosphere and encountered the closed field line region. Near closest approach, the spacecraft remained on approximately the same L-shell (L≈2) and the magnetometer data showed a harmonic spectrum that was interpreted as field line resonances by Volwerk et al. [1999, JGR 104, 14729]. Later in Galileo's mission, during the G28 flyby, the spacecraft entered more deeply into the upstream magnetosphere and remained near L≈1.5 around closest approach. Again, a harmonic spectrum was found in the magnetometer data, which may be caused by field line resonances. However, there is also evidence for other kinds of ULF waves, such as ion cyclotron waves and magnetopause related oscillations.
In this presentation we will take a closer look at the strong ULF waves in Ganymede's magnetosphere. We will try to characterize the various wave modes through a combination of magnetometer (MAG), energetic particles (EPD), plasma wave (PWS) and plasma (PLS) data.