

Ion Cyclotron Waves During the Rosetta Approach Phase: A Magnetic Estimate

M. Volwerk (1), K.H. Glassmeier (2), M. Delva (1), C. Koenders (2), I. Richter (2)

(1) Space Research Institute, Austrian Academy of Sciences, Graz, Austria, (2) Institute for Geophysics and Extraterrestrial Physics, TU Braunschweig, Germany (martin.volwerk@oeaw.ac.at / Fax: +43-316-4120590)

Abstract

We investigate the ion cyclotron waves, which are expected to exist around comet 67P/Churyumov-Gerasimenko due to outgassing of the nucleus, during the approach phase of the Rosetta spacecraft. Based on experiences with comets like Halley and Grigg-Skjellerup we will study the ion pickup rate for different outgassing rates of CG; variations in ionization efficiency and solar wind conditions. We will make estimations for what the Rosetta magnetometer will measure during the last million km, i.e. wave amplitudes and wave forms. This study will allow an early and rough estimation of the gas production rate of the comet by magnetic field measurements.

