



## **First assessment of the JUNO/Waves antenna properties**

Manfred Sampl (1), Thomas Oswald (1), Helmut O. Rucker (1), Georg Fischer (1), Dirk Plettemeier (2), William S. Kurth (3), and Wolfgang Macher (1)

(1) Austrian Academy of Sciences, Space Research Institute, Graz, Austria (manfred.sampl@oeaw.ac.at), (2) Chair in RF and Photonics, TU-Dresden, Dresden, Germany, (3) Department of Physics and Astronomy, University of Iowa, Iowa City, Iowa

We report our first analysis of the electrical field sensors of the Waves instrument onboard the JUNO spacecraft, which is planned to be launched in August 2011.

The Waves instrument, which is part of the radio/plasma wave experiment, carries two boom antennas extruded from the main body of the spacecraft as sensors. Due to the fact that the spacecraft configuration does not allow a third antenna boom, tri-axial measurements for goniopolarimetry techniques, like direction finding, are only possible using the rotating dipole technique. In addition to that the antennas are subject to distortion by the nearby conducting spacecraft body.

In order to acquire the true antenna parameters we use a software model and a known electromagnetic solver to calculate the current distribution on the spacecraft. The knowledge of the current distribution allows the estimation of the true antenna parameters represented by the effective antenna vectors and associated impedances.

The analysis of the reception properties of these antennas is presented, along with a contribution to the understanding of their impairment by other objects on the spacecraft.