



New insight on Jupiter's deep jets using the Juno gravity and magnetic field measurements

Keren Duer, Eli Galanti, and Yohai Kaspi

Weizmann institute of science, Earth and planetary sciences, Israel (kerenduer89@gmail.com)

The behavior of Jupiter's deep flow is still not fully resolved. The high-precision measurements provided by the Juno spacecraft allow new constraints on the deep flow, and further measurements will allow taking another step in resolving this puzzle. The gravity measurements provide insight into the depth of the flow via the relation between the density anomalies and the flow fields. In this study, we investigate each of the gravity harmonics separately and show that each harmonic by itself can add boundaries on the wind strength at different depths. Adding magnetic field considerations, since the flow is expected to penetrate areas of high electrical conductivity, allows further constraints on similar depths as some of the gravity harmonics. We also present a new method for finding the best deep flow profile, that can fit both the gravity measurements and the expected time-varying magnetic field measurements.