



Plasma Waves Associated with the Io Footprint Tail

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Auroral features related to the Jupiter's Galilean satellites are often detected in images of the Jovian aurora. Of these emissions, the auroral footprint spot and tail related to Io are the most intense and stable. The Juno spacecraft has crossed magnetic flux tubes associated with the Io auroral footprint tail on a number of its early orbits. The radio and plasma wave instrument ("Waves") has detected large amplitude electromagnetic waves during many of these crossings. These emissions are usually detected for a few seconds to tens of seconds and high resolution Wave burst data show that peak amplitudes of these waves can reach about 1 V/m for the electric and a few nT for the magnetic. The emission frequencies are well below the electron cyclotron frequency and likely below the electron plasma frequency. The characteristics of the waves vary with downtail distance from the auroral footprint spot and appear to be well correlated with the particle observations. We will discuss the details of these waves and examine possible wave modes.