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Ionospheric shadowing signatures of ringlets and plateaus in Saturn's C Ring

Joshua Dreyer^{1,2} and Erik Vigren¹

¹Swedish Institute of Space Physics, Space Plasma Physics, Uppsala, Sweden (joshua.dreyer@irfu.se)

²Uppsala University, Department of Physics and Astronomy, Uppsala, Sweden

During the Grand Finale of the Cassini mission, the southern hemisphere of Saturn was shadowed by its rings and the substructures within, whose more intense shadows can be mapped to specific ionospheric altitudes. We successfully connect small-scale variations (dips) in the ionospheric H_2^+ density below 2500 km, measured by the Ion and Neutral Mass Spectrometer (INMS) during orbits 288 and 292, to the shadows of individual ringlets and plateaus in the C Ring. From the H_2^+ density signatures we estimate lower limits of the associated ringlet or plateau opacities. These will be compared with results obtained from stellar occultations and potential implications/constraints on the ionospheric dynamics will be discussed. The ringlet and plateau shadows are not associated with obvious dips in the electron density.