

# Estimation of the electron density profile in the lower ionosphere using MF radar

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S-310-33 observation rocket was launched at Uchinoura Space Center (USC) in January

2004. MF radar observation was performed with the rocket experiment at the same time. Electron density in the lower ionosphere region can be estimated by DAE (Differential Absorption Experiment). This method estimates electron densities by the difference in absorption due to polarization.

The objective of this study is to improve the precision in estimating the electron density from MF radar observation. First, We compare the electron density obtained by the MF radar observation with that obtained by the rocket observation. We verify the precision of electron density estimated from MF radar observation. Next, we verify the estimation process of electron density with the Full Wave method. We can improve the precision of estimating the electron density from MF radar observation with these results.