

## Estimation of an electron density in the lower ionosphere derived from LF/MF polarized plasma waves observed by sounding rockets

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Electrons in the lower ionosphere are closely related to neutral dynamic meteorology and chemistry including such as hydrated ion and NO<sub>x</sub>, though the electron density is very small, from ten to several thousands /cc. Therefore it has the possibility to find a new physical knowledge in mesosphere and lower ionosphere.

Radio wave propagation characteristics in ionospheric D and lower E region are affected by an electron density profile. Conversely, the electron density profile can be estimated by radio wave propagation characteristics measured by a sounding rocket. The propagation characteristics in the ionosphere are calculated by using Full wave method. It needs the electron density profile previously to calculate the propagation characteristics by Full wave method. The electron density profile can be estimated by comparing the radio wave propagation characteristics calculated by Full wave analysis with the observed one.

In this study, we show the two observation results of S-310-37 and S-520-23 which are carried out in Kagoshima, Japan, in order to estimate the electron density in the ionospheric D and E region.