Single and both propagation modes of auroral kilometric radiation (AKR) observed by KAGUYA


In the KAGUYA (SELENE) LRS instrument [1], WFC-H [2] observes wave spectra in 1kHz-1,000kHz and various plasma waves like Auroral Kilometric Radiation (AKR), electron plasma waves, and broadband electrostatic waves have been observed. This system can observe wave polarizations by two pairs of dipole antennas. We have analyzed the AKR polarizations.

The propagation mode of AKR has become possible from the polarization measurement of WFC-H using lunar occultations [3]. This method is applied to other examples. For examples, the propagation mode can be decided since the source hemisphere can be decided clearly, both polarizations are observed while both hemispheres can be seen, and the other mode is observed after an occultation. Their propagation modes can be estimates based on their source hemispheres. The results will be compared with ray tracing studies.

References

