

## Atmosphere-Ionosphere Coupling Studied with a High-Resolution Electrodynamic Model

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Ionospheric electrodynamic plays an important role not only in causing storm-time ionospheric disturbances but in causing day-to-day ionospheric density variation and irregularity. The latter phenomena are known to be related to thermospheric variations, some of which originate from the lower atmosphere. For example, the day-to-day variation of equatorial ionization anomaly (EIA), which affects ionospheric density at low-to-mid latitudes, is driven by low-latitude electric field generated from atmospheric waves via dynamo process. Recently observed 4-wave structure of EIA suggests that some of the variations are of tropospheric origin. The occurrence of equatorial plasma bubble also varies on the day-to-day basis.

We are developing an atmosphere-ionosphere coupled model, which is expected to contribute to the understanding of lower atmospheric effects on the ionospheric day-to-day variation and irregularity. In this presentation, we report some recent upgrades of the electrodynamic model as a component of the atmosphere-ionosphere coupled model.

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