

## 極域電離圏上部におけるイオン散逸のモデリング

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### Modeling of ion escape from topside polar ionosphere

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A modeling of topside polar ionosphere was made from data obtained by Suprathermal Ion Mass Spectrometer (SMS) on Akebono satellite. The SMS measures ion energy distributions in the energy range from 0 to 25 eV and in the mass range from 1 to 64 m/q. The satellite is still observing the topside polar ionosphere from 1989. With a least square method, model functions in the 6 dimensional space were fitted for the data such as plasma parameters of density, velocity and temperature of H<sup>+</sup>, He<sup>+</sup> and O<sup>+</sup>. An empirical model of topside polar ionosphere is obtained as functions of magnetic latitude, magnetic local time, season, altitude, F10.7 solar flux intensity and geomagnetic activity. The modeling shows clearly that ion density and ion escape flux from topside polar ionosphere to the magnetosphere depend on solar and geomagnetic activities. The ion escape flux exceeds more than 10 tons/day. We suggest that the ion escape from polar ionosphere is one of the source mechanisms of magnetospheric plasma and the escaping ions affect ring current and the magnetospheric dynamics.