

## **High-Latitude Ionosphere-Thermosphere Interactions**

Arthur D. RICHMOND<sup>(1)</sup>

(1) NCAR-HAO, PO Box 3000, Boulder, CO 80302, USA

Energy and momentum transfer to the high-latitude ionosphere from the magnetosphere dominates much of the ion and neutral dynamics of this region above 100 km. In the upper thermosphere changes of thermospheric composition and mass density depend strongly on the altitude of heat deposition and on dynamical interactions among winds, composition, and density. In the lower thermosphere an analysis of potential vorticity helps clarify some of the dynamical interactions between wind and temperature: Ampere acceleration by the convecting ions changes not only the wind but also the temperature structure, while Joule heating modifies not only the temperature but also the wind.