

Assimilation of Thermospheric Winds with HWM93 and TIEGCM

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In this study, some preliminary results of data assimilation for thermospheric winds are presented. Two models, HWM93 (an empirical model of the horizontal neutral wind in the upper thermosphere) and TIEGCM (National Center for Atmospheric Research-Thermosphere-Ionosphere-Electrodynamics General Circulation Model), were used to do the data assimilation in which the results of HWM93 and TIEGCM runs were taken as observed and simulated data, respectively. Following the calculation of cost-function, we find the appropriate parameters to make the results of TIEGCM runs very close to that of HWM93. In this way, we may obtain the distributions of neutral wind at the lower thermosphere, for example, between 90 to 150 km.