

Implementation of regional spectral model into CWB GFS for regional climate study and prediction

Hann-Ming Juang
NCEP, NWS, NOAA, Washington, DC 20233
301-763-8000x7260, 301-763-8545 (fax)
henry.juang@noaa.gov

Chih-Hui Shiao
Research and Development Center
Central Weather Bureau

Abstract

The past performance of the NCEP regional spectral model (RSM) on regional climate indicates that it is a suitable regional model for regional climate; not only its conservation of the large-scale pattern in a long-term integration, but also its maintainance of the mesoscale features. Besides the performance, NCEP RSM has its very own concept on saving resources, not only the coding implementation, but also the future development. The idea of an economical way to have a portion of regional model inside of global model is followed.

The idea of the same model structure and model physics in the NCEP RSM is used here, except the model dynamics may have a little differences between global and regional parts. It is the same implementation as the NCEP RSM. Thus, a localized RSM, called CWB NSM, is developed following the model structure of the CWB global model (GFS) and using the model physics of GFS. It is wellknown that the lateral boundary problem is the major error of the regional model. In order to reduce this error, the same model structure and model physics between two neighbor grid systems are the most easy and simple way to do, they are used here.

A preliminary results from the CWB NSM will be presented, the future plan and its further development will be addressed.

Key Words: regional model, regional climate, spectral model