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Evaluation of the NMMB/BSC Chemical Transport Model from global to regional scales

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The NMMB/BSC Chemical Transport Model (NMMB/BSC-CTM) is a new integrated air quality modelling system developed for global to sub-synoptic scale forecast and research applications. Its unified nonhydrostatic dynamical core allows regional and global simulations with consistent dynamics, physics and chemistry through multiple scales. The meteorological driver is the NCEP new global/regional Nonhydrostatic Multiscale Model on the B grid (NMMB). NMMB/BSC-CTM incorporates a gas-phase tropospheric chemical mechanism based on Carbon Bond 2005 coupled with a stratospheric ozone linear model, and an aerosol module for globally relevant aerosols (mineral dust, sea salt, black carbon, organic carbon and sulphate). In this contribution, the current status of development of the modelling system will be presented and evaluation results of the model at both global and regional scales will be discussed. Chemical model results will be compared against surface stations, ozonesondes, HALOE satellite retrievals, and MOZAIC flight measurements. Furthermore, mineral dust and sea salt aerosols will be evaluated with the AERONET sunphotometers network, surface observations, cruise measurements, and satellite data.