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Evaluation of a five year global simulation with GEM-AQ

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The Global Environmental Multiscale model with air quality processes (GEM-AQ) has been developed by the Multiscale Air Quality Modelling Network (MAQNet). The model is based on the Canadian operational weather prediction model (GEM) and includes online chemical processes for 53 gas phase species and 4 size-resolved aerosol types. For this work, the model was run with a globally uniform resolution of 1.8x1.8 degrees with 28 vertical levels. To examine seasonal variations and regional distributions of ozone, results from a five year simulation will be presented and compared with monthly mean ozonesonde data and 2D climatology (Logan et al., 1999). Ozone precursor climatologies compiled by Emmons, 2000 also provide a useful means to identify issues relating to the processes and emissions used in the model. In addition to these surface-based observations, space-borne instruments such as MLS and OMI onboard the AURA satellite and MOPITT on the TERRA satellite can supply measurements for model evaluation. In addition to the above, a comparison of modelled and measured CO will be presented.