



GEM-AQ modelling of smoke events observed in the Canadian High Arctic

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Fine-mode aerosol events that could be traced back to forest fires in Siberia, Russia and Northwest Territories, Canada were observed during the summer of 2007 and spring of 2008 at the Polar Environment Atmospheric Research Laboratory (PEARL) located at Eureka on Ellesmere Island. The simulation of these events was performed with the Global Environmental Multiscale Air Quality model (GEM-AQ), a global, tropospheric chemistry, general circulation model based on the global multi-scale model developed by the Meteorological Service of Canada for operational weather forecasting. The model output is compared with vertical profiles from the Arctic High Spectral Resolution Lidar (AHSRL) and with spectral sunphotometer data acquired at Eureka, as well as with MODIS, CALIOP and OMI products over the Arctic.