

Séminaire Vendredi 27 Juin 11h00 / Seminar Friday June 27, 11:00 AM

Deux présentations du SCMO 2008 / Two Presentations from CMOS 2008

(30 min pour chaque présentation / 30 min for each presentation)

Conférencier/Lecturer: 1. Irena Paunova
2. Yves Pelletier

Sujet/Subject: 1. A Comprehensive New Aerosol Climatology in GEM
2. Changements au système opérationnel du CMC en
2007-2008 et plans pour l'année en cours

Présentation/Presentation: 1. Anglais / English
2. Français / French

Lieu/Room: Grande salle du premier étage CMC

Résumé / Abstract:

1.

A comprehensive 3-D multi-component, multi-modal aerosol climatology is evaluated in a series of short-term (5-day) and climate simulations with the new GEM model, which includes a higher model top of 0.1 hPa and new narrow-band parameterizations for solar and terrestrial radiation, and for aerosol. Aerosol optical depth (AOD) and radiative forcing are evaluated and validated with the MODIS and CERES remotely-sensed datasets, with the AERONET surface dataset, and with results from the AeroCom chemistry-climate modeling experiment.

The results show that the climatological aerosol provides a more realistic distribution of AOD and aerosol radiative forcing than the current zonally uniform AOD. The extinction AOD (including scattering and absorption) and the absorption AOD (0.1112 and 0.7234 respectively) are in good agreement with the AeroCom mean-model but is smaller than the remotely-sensed and the AERONET estimates. Differences in AOD exist on component basis and are due to aerosol mass differences and aerosol specific extinction differences.

The validation of the aerosol forcing with remotely-sensed data raises issues about model deficiencies as well as instrument limitations. The top of the atmosphere and surface shortwave forcing is respectively up to -10 and -20 W m⁻² (-3.5 and -4.7 W m⁻² global average) and is mainly due to scattering by sulfate and sea salt aerosol. The atmospheric shortwave forcing is up to +20 W m⁻² (+1.2 W m⁻² global average) and is mainly due to absorption by dust and black carbon aerosol. The longwave forcing is much smaller than the shortwave forcing and is mainly due to absorption.

2.

Le système automatisé de prévision numérique du temps du CMC comprend de nombreuses composantes qui sont régulièrement mises à jour pour y incorporer les innovations apportées par la Recherche et le Développement. Nous ferons un bref survol du rôle de la section de l'Implémentation dans le processus de production des prévisions météorologiques et du transfert technologique; nous poursuivrons ensuite avec un historique des implémentations de 2007-2008 et nous évoquerons les ajouts prévus en 2008-2009.