Chemical-dynamical coupling in data assimilation

Authors:

R. Menard (1)
D. Fonteyn (2)
S. Chabrillat (2)
P. Gauthier (1)
M. Charron (1)
A. Robichaud (1)
Y. Rochon(1)
J.C. McConnell (3)
J.W. Kaminski (3)

(1) Meteorological Service of Canada
(2) Belgium Institute for Space Aeronomy
(3) York University

Brief Abstract:

Many of the presing questions about climate change and global air quality look to the development of an integrated atmospheric data assimilation system of meteorological and chemical observations that should be capable of delivering real time prediction as well as long term analyses.

Although there are many known interactions between dynamics and chemistry, there is usually in data assimilation no cross error covariance between dynamical and chemical variables. A new colloborative effort between the Meteorological Service of Canada, the Belgium Institute for Space Aeronomy, and York University in Canada has recently been plut in place to examine the linkages between dynamical and chemical data assimilation. An outline of the project will be presented ans well as some preliminary results. The main difficulties of its implementation as well as its potential impact will also be presented.