Séminaire 30 Mars 2012 11h /Seminar March 30th 2012 11h

Conférencier/Lecturer:	Ayrton Zadra
Sujet/Subject:	Recent changes to the orographic blocking parameterization
Présentation/Presentation:	Français / French
Lieu/Room:	Salle des vents (Dorval)

wiki: https://wiki.cmc.ec.gc.ca/wiki/RPN_Seminars

iweb: http://web-mrb.cmc.ec.gc.ca/mrb/rpn/SEM/
web: http://collaboration.cmc.ec.gc.ca/science/rpn/SEM/index.php

Abstract

The orographic blocking scheme parametrizes the drag on low-level winds that are blocked at the flanks of unresolved mountains. It was first introduced in the GEM model physics in 2001, and has since been used in the CMC operational (global and regional) systems.
Recent studies by Vosper et al. (2009) suggested that the bulk drag coefficient (Cd) − a constant that dictates the overall amplitude of the drag − should vary according to the stability of the incident flow, and thus should not be treated as a constant. Also, numerical experiments by Wells et al. (2008) revealed that nonlinear effects could further increase the effective value of Cd.
In this talk we present a brief review of the orographic blocking scheme; a summary of the studies by Vosper et al. and by Wells et al.; how the results from those studies translate into changes to the scheme; and how those changes can significantly reduce forecast errors of the CMC GDPS (Global Deterministic Prediction System). We also discuss the interaction between the orographic blocking and the boundary layer scheme – which has also been changed recently (see Ron McTaggart-Cowan's presentation).