

## Meta data description for RCM model simulations in ENSEMBLES RT3

### ERA40@50 and ERA40@25 Simulations

#### 1. General:

1.1 Name of model: Canadian RCM (CRCM)

1.2 Version: 4.2.3

1.3 Reference: Plummer, D., D. Caya, H. Côté, A. Frigon, S. Biner, M. Giguère, D. Paquin, R. Harvey and R. de Elia, 2006: Climate and Climate Change over North America as Simulated by the Canadian Regional Climate Model. *J. of Climate* **19**, 3112-3132

1.4 URL: [www.ouranos.ca](http://www.ouranos.ca)

#### 2. Model setup:

2.1 Grid specifications:

2.1.1 Projection: Polar Stereographic 55 km and 26.5 km true at 60N

2.1.2 Number of horizontal grid points: 109x109 and 209x209

2.1.3 Number vertical levels: 29 levels with model top 30km

2.1.4 Type of vertical coordinate: Gal-Chen

2.2 Soil and surface specifications

2.2.1 Name of soil and SVAT model: Canadian LAnd Surface Scheme (CLASS) version 2.7, 3 layers

2.2.2 Physiographical data

Orography, GTOPO30, figure 1.

Vegetation based on GLC2000 (Global Land Cover 2000) and Wilson and Henderson-Sellers 1 x 1 for texture data (clay and sand).

Ozone, monthly, based on Wang, Liangm Dudek, Pollard and Thompson, 1995. 59 levels, from 1003,6 to 0.28 hPa T42.

2.3 External Forcings

Solar constant : 1365 kW/m<sup>2</sup>

Green house gas concentration : transient see table 1 for typical values.

	CO2	CH4	N2O	C11	C12
1958_m01	315 x 10E-6	1.227 x 10E-6	0.29 x 10E-6	0.14 x 10E-10	0.242 x 10E-10
1960_m01	316	1.247	0.291	0.175	0.303
1970_m01	325	1.42	0.295	0.50	1.09

1980_m01	337	1.57	0.301	1.64	2.9
1990_m01	352	1.7	0.308	2.58	4.67
2000_m01					

Table 1. GHG concentration ppmv

Aerosols : SO<sub>4</sub>, values in 1850, 1900, 1920 and then every 10 years, spatial variation. Ref. O. Boucher, M. Pham (2002), History of sulfate aerosols radiative forcings. JGR 29(9).

#### 4. Additional information on model set up

#### 5. Information on the performance

Simulations with version 4.2.1 had some problems with interpolation of ERA40 sst's causing surface temperature bias near coastline. Otherwise, versions 4.2.1 and 4.2.3 similar, but for the ozone field (4.2.1 used Kita and Sumi).

6. Email address for contact person: [paquin.dominique@ouranos.ca](mailto:paquin.dominique@ouranos.ca)  
or [cava.daniel@ouranos.ca](mailto:cava.daniel@ouranos.ca),

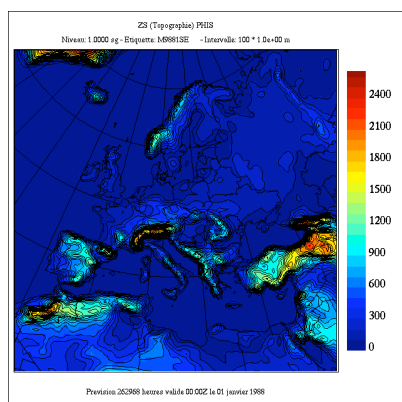


Figure 1. Orography

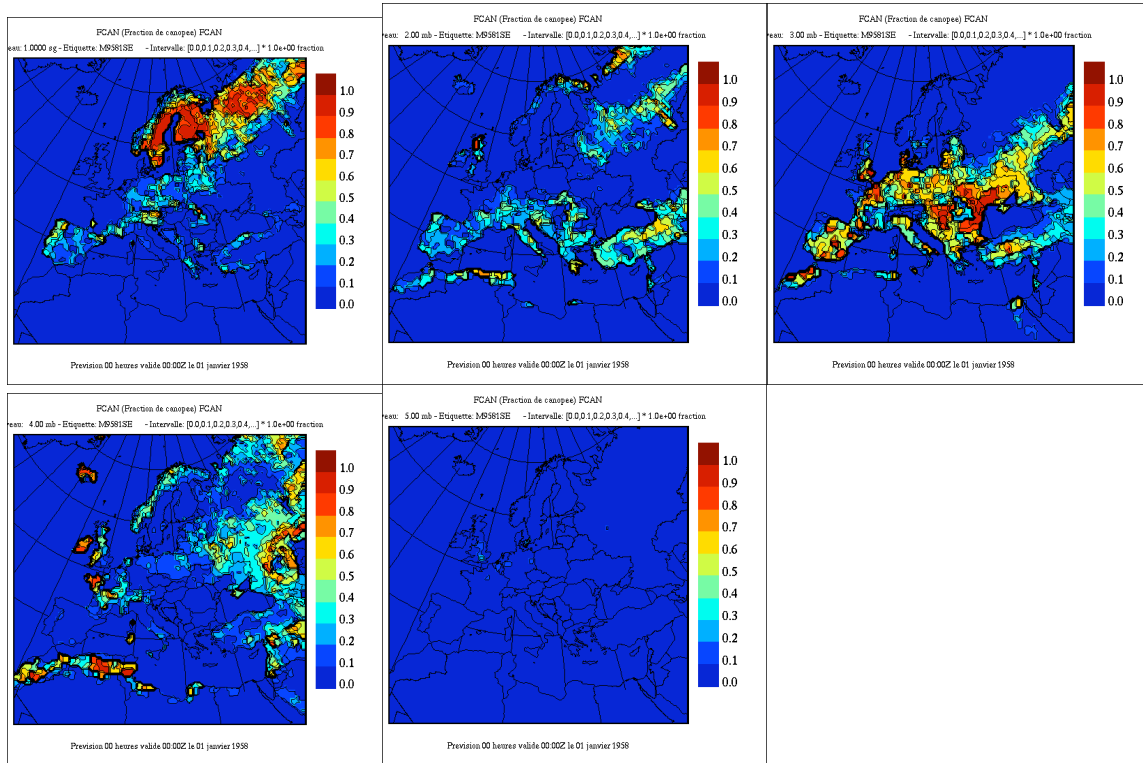


Figure 2. Soil type (%) a-coniferous b-broadleaf c-arable crops d-others e-urban

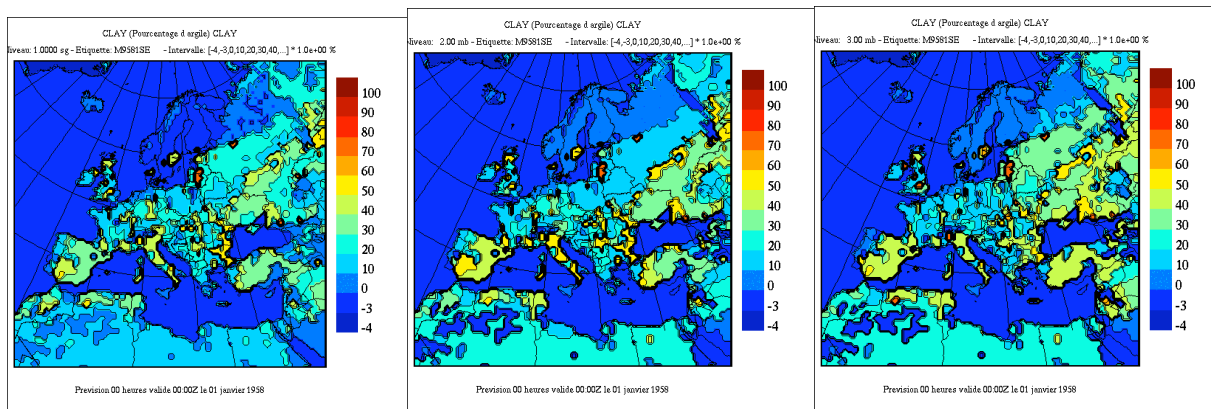


Figure 3. Clay % in each layer.

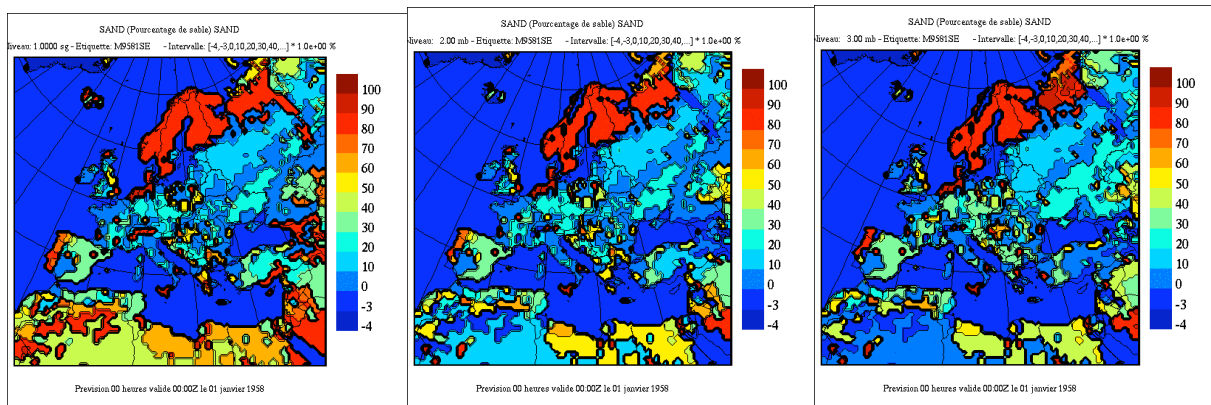


Figure 4. Sand % in each layer.