



Extreme convective rainfall and the diurnal cycle of precipitation in a suite of Regional Climate Models

Z. Kothavala (1), C. Jones (1), A. Zadra (2), K. Winger (1) and D. Paquin (3)

(1) MRCC-ESCGR, Université du Québec, Montréal, (2) RPN, Meteorological Services of Canada, Montréal, (3) Ouranos Consortium, Montréal (zav@sca.uqam.ca / +1-514-282-7131)

The simulations of the regional climate over North America and Europe are evaluated from a suite of regional climate models (RCMs) with the objective of assessing their "transferability". That is, the ability of RCMs to simulate the variability of continental scale climates over different regions of the world with minimal parameter changes. The models are: the Rossby Centre Regional Atmospheric Climate Model (RCA3) from Sweden; the Canadian Regional Climate Model (CRCM); and the climate version of the operational forecast model of Environment Canada (GEM-LAM). The RCMs were piloted by ERA40 and NCEP boundary conditions for a five year period spanning from 2000 to 2004. Model variables sampled at high frequency were compared to observations in the CEOP archive. In particular, we focus on the ability of the three RCMs to simulate the diurnal cycle of precipitation over the two continents. Differences in the timing and intensity of summer-time convective precipitation are analyzed from a perspective of the different parameterization schemes of convection and clouds. The strengths and weakness of these schemes and their effects on extreme precipitation events will be presented.