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Climate Change Downscaling and Probabilistic Analysis

Novus and York University are conducting a research project funded by the Ontario Ministry of Environment to investigate climate change downscaling for Canada and also focus on probabilistic analysis. Major climate parameters include temperature, precipitation and degree days. This study provides an in-depth understanding of climate change impacts on local scale of Ontario, along with uncertainty analysis. This talk will present the recent work on high resolution (CRCM resolution) changes in two temperature indices: heating degree days (HDD) and cooling degree days (CDD), which are all related to the energy demanding and many other adaptation studies. In this study, based on the work and method developed in Li et al. (2011), using the temperature simulated by the RCM and its driven GCM, we established the high resolution statistical downscaling model for annual-accumulated HDD and CDD, then applied this tools to other GCM runs to project the future changes in HDD and CDD. The source of uncertainty in this high resolution projection was also investigated.