Geophysical Research Abstracts,
Vol. 10, EGU2008-A-00368, 2008
SRef-ID: 1607-7962/gra/EGU2008-A-00368
EGU General Assembly 2008

1 Assessment of Climate effects on morbidity in Quebec (Canada) over last 20 years

S. El Adlouni (1), L. Bayentin (1), T. B.M.J. Ouarda(1) and P. Gosselin(2)

(1) Hydro-Quebec/NSERC Chair in Statistical Hydrology, Canada Research Chair on the Estimation of Hydrological Variables, University of Quebec, INRS-ETE, 490, de la Couronne, Quebec (QC) G1K 9A9, CANADA, (2) Institut National de Santé Publique du Québec (INSPQ) and Université Laval, 945, avenue Wolfe, Quebec (Quebec) G1V 5B3, CANADA

(salaheddine_el-adlouni@ete.inrs.ca)

Climatic and meteorological conditions are projected to increase in severity and frequency with increasing global mean temperatures and changes in precipitation regimes. Climate change is likely to have wide-ranging and mostly adverse impacts on human health. Several studies have explored this relationship especially for mortality. However, few studies have focused so far on the climate effects on morbidity. This study examined the relationship between meteorological variables and different causes of hospitalisations or emergency consultations in the province of Quebec, Canada. We first used exploratory methods to help identify a parsimonious set of explanatory variables. Through a two-step modelling process, we used at first the Bayesian P-spline and Generalized Additive Models (GAM) to estimate the relationship between each covariate and the response variable on a historical basis (1982-2006), followed by the Generalized Cross-Validation (GCV) for model selection. The data used for the study were the Hospital Medical Discharge Records and Emergency Rooms databases from the Health and Social Services Ministry of Quebec for all non-traumatic causes, and corresponding meteorological and climatic variables for socio-health regions and major cities of Quebec. Methodological aspects and illustrative results will be presented.