

**YORK UNIVERSITY
DEPARTMENT OF EARTH AND SPACE SCIENCE AND
ENGINEERING
and
CENTRE FOR RESEARCH IN EARTH AND SPACE SCIENCE**

S E M I N A R

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**Seasonal weather outlooks using tuned data based on
ECHAM4P5 dynamical model predictions for Asian
regions**

ABSTRACT

A model has been developed to provide a seasonal weather outlook for South Asian Association for Regional Cooperation (SAARC) member countries including Pakistan, India, Afghanistan, Nepal, Bhutan, Sri Lanka and Bangladesh. The model is based on results from the International Research Institute for Climate and Society (IRI) using ECHAM4P5, a dynamical General Climate Model, developed by the Max Planck Institute for Meteorology (MPI) in Hamburg, starting from an early version of the European Center for Medium-Range Weather Forecasts (ECMWF) weather forecast model. ECHAM4P5 is run every month by using a persisted Sea Surface Temperature (SST) at 0000 of 1st day of every month. The output simulation of ECHAM4P5 is then tuned by applying Regional Correction Factors (RCF) introduced by the Pakistan Meteorological Department. RCF have been computed by a long term comparison of model simulations and Global Precipitation Climatology Center (GPCC), gridded observation data, on a monthly basis. Both graphical (spatial distribution) and quantitative formats of seasonal and monthly weather outlooks with up to three months lead time are used to make the output more applicable. The confidence level of the model is encouraging (more than 80%) during both winter and summer seasons, while there are weaker scores during transition periods (autumn and spring season). A similar approach may be possible for Canadian regional seasonal prediction.

BIOGRAPHY

Dr. Khalid Malik is a director in the Pakistan Meteorological Department and head of the National Agrometeorological Center (NAMC), looking after the Agro-meteorological sector in the country. He also teaches meteorology-related courses at COMSAT, Institute of Information Technology (CIIT) Pakistan. He obtained his PhD from ESS, York University in 2010 with Prof. Peter Taylor. His PhD topic of research was a study of drought over Central Southwest Asia. He identified the causes of severe drought over the Asian region during 1999-2001 and found tele-connections with different climatic indices. He has introduced weekly and decadal periodical meteorological related agriculture reports since 2011 in NAMC. These reports contain regular crop monitoring data and update meteorological information for the agriculture sector. He has developed a seasonal weather model for Pakistan and its neighboring countries including India, Afghanistan, Nepal, Bangladesh, Bhutan and Sri Lanka. The model can also be used for hydrological seasonal weather outlook by simply changing the model input and Regional Correction Factors for that particular region. His broad research interests include the impact of climate change in the region, monsoon dynamics, the importance of meteorology in the agriculture sector, regional weather tele-connection with different climatic indices etc.

Refreshments will be served at 3:15 p.m. in Room 422 Petrie Science and Engineering Building.

DATE: Wednesday, October 8th, 2014
TIME: 3:30 p.m.
LOCATION: Room 422, Petrie