

## **Predictability and Dynamical/Physical/Chemical Processes**

### **Ensemble prediction systems, stochastic forcing and TIGGE**

Ensemble prediction techniques have been adopted to help estimate the uncertainty in weather predictions due to the growth of initial errors (chaos) and model uncertainty. Ensemble prediction techniques are a necessity in the medium range and also valuable for short-range forecasts of smaller-scale phenomena. Ensemble prediction requires accurate estimates of uncertainties in both the initial conditions and appropriate methods for simulating the errors that accrue due to forecast model deficiencies. The primary focus of this session is the use of stochastic and multi-model ensemble techniques to represent the model errors due to unresolved processes. Correctly representing that stochasticity is one of the major challenges facing earth system prediction.

The session will cover both idealised stochastic forcing methods and the implementation of those techniques in practical ensemble prediction systems. Studies evaluating the performance of ensemble prediction systems using results from the TIGGE (THORPEX Interactive Grand Global Ensemble) dataset of global forecasts or its limited-area counterpart (TIGGE-LAM) will be particularly welcome.