



Structural and Initial Conditions Uncertainties In Seasonal Forecasts

Noel Keenlyside and Mao-Lin Shen

Geophysical Institute and Bjerknes Centre, University of Bergen, Norway

Seasonal forecasts made with a single model are generally overconfident. The standard approach to improve forecast reliability is to account for structural uncertainties through a multi-model ensemble (i.e. an ensemble of opportunity). Here we analyse a multi-model set of seasonal forecasts available through ENSEMBLES and DEMETER EU projects. We partition forecast uncertainties into initial value and structural uncertainties, as function of lead-time and region. Statistical analysis is used to investigate sources of initial condition uncertainty, and which regions and variables lead to the largest forecast error. Similar analysis is then performed to identify common elements of model error. Results of this analysis will be used to discuss possibilities to reduce forecast uncertainty and improve models. In particular, better understanding of error growth will be useful for the design of interactive multi-model ensembles.