



Dynamically downscaled multi-model ensemble seasonal forecasts over Ethiopia

Shakeel Asharaf (1), Kristina Fröhlich (1), Jesus Fernandez (2), Rita Cardoso (3), Grigory Nikulin (4), and Barbara Früh (1)

(1) Deutscher Wetterdienst, Climate and Environment, Offenbach aM Main, Germany (shakeel.asharaf@dwd.de), (2) University of Cantabria, Santander, Spain, (3) Instituto Dom Luiz, University of Lisbon, Portugal, (4) Rossby Centre, Swedish Meteorological and Hydrological Institute, Norrköping, Sweden

Truthful and reliable seasonal rainfall predictions have an important social and economic value for the east African countries as their economy is highly dependent on rain-fed agriculture and pastoral systems. Only June to September (JJAS) seasonal rainfall accounts to more than 80% crop production in Ethiopia. Hence, seasonal forecasting is a crucial concern for the region. The European Provision of Regional Impact Assessment on a seasonal to decadal timescale (EUPORIAS) project offers a common framework to understand hindcast uncertainties through the use of multi-model and multi-member simulations over east Africa. Under this program, the participating regional climate models (RCMs) were driven by the atmospheric-only version of the ECEARTH global climate model, which provides hindcasts of a five-months period (May to September) from 1991-2012. In this study the RCMs downscaled rainfall is evaluated with respect to the observed JJAS rainfall over Ethiopia. Both deterministic and probabilistic based forecast skills are assessed. Our preliminary results show the potential usefulness of multi-model ensemble simulations in forecasting the seasonal rainfall over the region.