

Climate extremes in East Asia and Australia

Planned work at MPI-M (Christopher Moseley, Armelle Remedio, Jan Haerter, Stefan Hagemann, Daniela Jacob)

The aim of this work is to study climate extremes and the underlying processes by which they are caused in the East Asian and Australian regions under present conditions as well as under climate change conditions, and will be done at MPI-M. The main research topics are the occurrence and possible trends of extreme rainfall events, droughts, and tropical cyclones. For the study of local extreme precipitation events and tropical cyclones, high resolution is necessary. We plan to use the regional climate model REMO on two domains with a horizontal resolution of ca. 50 km ($0.44^\circ \times 0.44^\circ$) to generate a dynamical downscaling of global model output and reanalysis data. A storm tracking algorithm developed at MPI-M allows to track the paths of tropical cyclones and analyse their life cycles. The planned REMO simulations can be used for the CORDEX project, which will contribute to the 5th IPCC assessment report.