European Climate Research Alliance
Side event at ICRC-CORDEX 2016

Extreme events in a changing climate

Challenges and perspectives in hydro-meteorological modelling

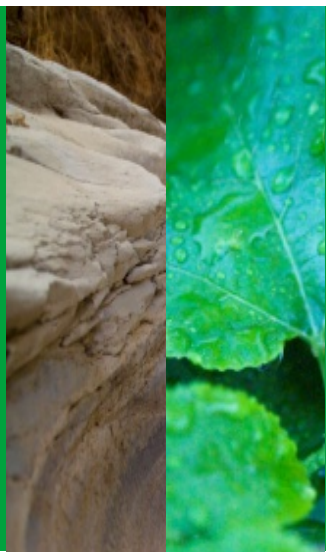
Wednesday, 18 May 2016 | 17:00 – 18:30
Stockholm, Sweden

Extremes in general and hydrological extremes in particular are likely to increase in a warming world. Recent heavy precipitation and large-scale flooding events emphasize the need for **bridging the scale gap between climate system modelling, high resolution hydrological modelling and impact assessments**. Modelling systems contributing to a better understanding of future risks from extreme events and communicating them efficiently to a growing number of users **serve a fundamental societal need**.

One of the big challenges is bringing the model data to the user community: How to inform users about the quality and uncertainties? How to incorporate the human dimension more explicitly? How to apply and interpret model results effectively for improved water resource management, flood and drought mitigation or sustainable water security?

Model developers have to be prepared to integrate the socioeconomic perspective more explicitly.

This ECRA side event will bring together researchers, policy-makers and data users providing input to the current discussion about designing "climate services".



ICRC-CORDEX is an initiative of: WCRP World Climate Research Programme; WMO, IOC, ICSU

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Documentation

In the panel discussion, invited guests from the climate modelling community shared their experiences within the CORDEX project, Climate Services and possible applications. The discussion focussed on the needs for better understanding and bridging the temporal and spatial scale gaps between climate system modelling, high resolution hydrological modelling and impact assessments.

Left: Welcome note by Karin Lochte (Director AWI/Germany, ECRA Chair); ight: Panel (left to right): Peter Braesicke (KIT, ECRA Co-chair Collaborative Programme High Impact Events), Filippo Giorgi (CORDEX SAT, WCRP), Erik Kjellström (SMHI), Daniela Jacob (GERICS/German Climate Service Center), Moderation: Ralf Döscher (SMHI)

The panel concluded that:

- A better understanding of future risks of extreme events needs the involvement of the stakeholders and data users. This is linked to an efficient and appropriate communication of modelling results which might contribute to improved use of valuable data. Accordingly, a seamless transfer of climate relevant information is a big challenge for climate services.
- Extreme events in a changing climate are still keenly discussed: which return period do we expect or what is the effective water exchange between soil and atmosphere? Bridging the gap between scientific results and users will need more and iterated communication.
- For better representation of extremes, scientific efforts are needed to take on higher model resolution.
- The research community deals with multiple scientific questions, e.g. data quality related to the use of models and uncertainties. Different model outputs may also affect the communication to data users. The Climate science community emphasizes the importance of spatial but also temporal scale of extreme events.