



## Design precipitation - new results for Norway

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In August 2023, the extreme weather event “Hans” moved into Scandinavia from the southeast, bringing large amounts of rainfall. It led to large-scale floods, a number of landslides and forced evacuations across large parts of southeastern Norway, and ended up costing more than 150 million Euros.

In Norway, water poses the largest physical climate risk, and adaptation to prepare for such events is crucial. Successful adaptation relies on accurate design values for any location, area (such as a catchment), as well as for a future climate.

We will show results from a project focusing on all the aforementioned aspects. Specifically, we will present

- a user-friendly web tool offering design values for short-duration rainfall at any location in Norway, based on a spatial model with observations and gridded covariates as input (Dyrrdal et al., 2015),
- a framework for updating recommended climate change allowances based on user needs, to account for a changing climate in long-term planning and infrastructure design, and
- estimated Areal Reduction Factors (ARFs), which convert point estimates of extreme precipitation to estimates of extreme precipitation over a spatial domain, often used in flood risk estimation (Lutz et al., 2024). This analysis considers regional and seasonal dependence in ARFs for extremes of different durations based on gridded data products and provides preliminary recommendations for updated ARFs in Norway

### References:

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