

DYNAMICAL DOWNSCALING TO 1 KM SCALE – METHOD, RAINSTORMS

Technical factsheet

High-resolution climate data are of great benefit to hydrologists and managers of hydraulic infrastructure, but are computationally very expensive to generate. BINGO has developed a transferable methodology for greatly reducing the computational expense of producing such data, focused on the study of extreme precipitation events.

Standard climate model data are often too coarse to realistically simulate extreme precipitation events and the accompanying processes. Observational data are often too sparse to capture the maximum intensities of extreme events. This data-gap inhibits the planning and decision-making ability of water-managers at the catchment scale.

Simplified methodology

- Large-scale weather patterns and local-scale meteorological predictors associated with extreme precipitation are identified for the catchment.
- Climate model data are assessed for (i) similarity with the extremal patterns and (ii) exceedance of catchment-relevant thresholds of the local-scale predictors.
- Days which meet the criteria set in (i) and (ii) are classified as “potentially extreme” and selected for high-resolution dynamical downscaling. All other days are rejected, greatly reducing computational expense.

[For more information, consult the complete guidelines here.](#)

