



## **A runoff chart of Iceland based on numerically simulated precipitation**

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The runoff of Iceland has been evaluated for the time period 1987-2001 using the hydrological model WaSIM-ETH and meteorological data from the numerical weather model MM5. Two runoff maps have earlier been produced of the country, the first one was produced in 1956, based on seven years of runoff measurements, and the second one was produced in 1981, representing the runoff during three decades 1951-1980. This new runoff evaluation, however, represents a new generation of a runoff map since it is based on a distributed hydrological model from which time series and areal means can be extracted for several hydrological parameters, such as; runoff, evaporation, snow distribution and residence time.

The distributed hydrological model was calibrated against runoff data from 70 watersheds covering 1/3 of the country. Then, model parameters were evaluated for ungauged watersheds, by comparing model parameters from nearby watersheds with similar characteristics based on a recent hydrological classification of watersheds. Meteorological measurements for large areas in Iceland, especially the highland, are lacking. When the data from the meteorological stations are used for modeling runoff, the precipitation has to be scaled to account for losses due to wind. This scaling is substantial especially for snow. In this study, however the numerical weather model MM5 has simulated the precipitation, as well as other meteorological parameters, on an 8x8km grid covering the whole country. This is possible, because, the simulation of precipitation by the MM5 model appears to be quite accurate both regarding timing of events as well as accumulated precipitation over a longer period.