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Combination of ensemble weather forecasts and runoff simulations

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A novel software suite has been developed in order to better forecast the potential runoff for the large Þjórsár-Tungnaár watershed in S-Iceland.

The back-bone of the system is the AR-WRF numerical weather prediction model, forced with initial and boundary data from the NCEP global ensemble system. The AR-WRF model is run with two domains with 18 and 9 km horizontal resolution. The forecast spans two weeks and is run once daily. Data from the high resolution domain are used to force a novel runoff model, developed at Vatnaskil Engineers. Information on the resulting runoff distribution is than used by the Icelandic Power
Company (Landsvirkjun) to optimize its electric production through better use of the available reservoirs within the watershed.