Baltic Sea River Predicition Using Neural Networks

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Modeling the Baltic Sea is to a large part the result of the quality of the freshwater input, that is used for the simulation. One way to generate freshwater input for ocean models is to use hyrdological models such as E-Hype. E-Hype calculates the water balance using hydrological processes (e.g. snow, glaciers, soil moisture, groundwater contribution). It represents a complex forecast tool that uses underlying physical processes. In our work we will propose a method that allows to estimate the river runoff for any given river in the Baltic Sea using Recurrent Neural Networks (RNN). In absence of a fully functioning hydrogolocial model, that also uses a rather complex parametrization, RNNs represent a robust way to predict river runoff for any give period of time using atmospheric forcing.