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Building the tools to speed up the policy design cycle: letting policy makers work with hydrologic models themselves through eWaterCycle

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Hydrologists are important experts that policy makers rely on when making water related decisions. Through policy briefs, often including policy scenario simulations, policy makers are informed about the consequences their (intended) policies (or lack thereof) will have.

In drafting policy briefs, or choosing which scenario to run, scientists inevitably make political decisions, from obvious ones (how to weigh the importance of one land use type over another) to more hidden ones (using Kling-Gupta efficiency, which focuses more on low flow, to calibrate a model instead of Nash-sutcliffe efficiency, which focuses more on high flows). Ideally one wants to design the policymaker - scientist interaction such that most political decisions are made by the policymaker, without requiring her/him to become an expert hydrologist in the process. Any remaining (inevitable) decisions made by the hydrologist should be as transparent as possible.

The eWaterCycle hydrologic research platform facilitates this type of policy maker - hydrologists interaction. Within the platform experiments such as scenario runs are Jupyter notebooks that a governmental data-scientist can construct without having to be an expert in the hydrological models used: these are stored in (OPEN and FAIR) containers. Interactive web applications can be easily built on top of these notebooks using widgets, to allow the ultimate political decision maker to explore a broader range of policy options, instead of having to choose from a view of pre-run scenarios.

We will present a few examples of how the eWaterCycle hydrological research platform can be used to support water-relevant policy decision making.

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