



The 3 Os of open hydrologic science: Open data, Open software and Open system conceptualisations

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We claim that several issues, which we have so far poorly addressed, hamper advancements in hydrologic science. These issues include poor knowledge accumulation due to limited synthesis of the knowledge contained in thousands of journal papers, unclear characterization of our environment due to the poorly understood value of datasets, and poor reproducibility of modelling studies due to inaccessible software and workflows. These issues contribute to the epistemic (knowledge) uncertainty, which is present across hydrologic science, and limit our ability to reduce it. Here we discuss how open data, open software and open system conceptualizations (i.e. open perceptual models) can help to tackle these issues if they are made available in a meaningful way and if they can evolve through community engagement. We also discuss necessary advancements to further increase the benefits of these elements for an open hydrologic science.