



Data-Driven Approaches and Needs for Predicting Water Yield in Anthropogenically Altered Catchments

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(passcode: water)

Abstract:

Growing global populations are expected to continue driving rapid urbanization and the growing demand for food. Anthropogenic activities such as land development and mass transport of water for water supply and irrigation will intensify with growing populations, altering catchment hydrology and water yield (i.e., the volume of water flowing past a point in a stream over time). Altered water yield has significant implications for water supply, ecology, flood and risk management, and more. An easy-to-apply and broadly applicable method to enable easy assessment of changes to water yield under various anthropogenic activities is needed. Data-driven approaches show great promise but nearly all work pursuing such methods ignore anthropogenically-impacted catchments. This presentation will explore how various land use and water-related human activities alter water yield across the contiguous United States, identify priority data needs for such analyses, and compare the ability of statistical and machine-learning approaches to predict water yield.



Speaker Bios: Ben is actively finishing his PhD in Civil Engineering with a focus in Hydrologic Science and Engineering at Colorado State University (CSU). His research has focused on data-driven approaches to decision making regarding land-use and urban stormwater management. He is a trainee in the National Science Foundation Interdisciplinary Training, Education and Research in Food-Energy-Water Systems Program. He completed his M.S. at CSU in the same field as his PhD and his B.S. at CSU in Environmental Engineering concentrating in Ecological Engineering. Ben worked with the USDA Water Management and Systems Research Unit between his B.S. and M.S. He recently defended his dissertation and is looking forward to joining WEST Consultants as a Staff Engineer in January.