Evaluating catchment response to artificial rainfall from four weather generators for present and future climate - DTU Orbit (03/01/2019)

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The technical lifetime of urban water infrastructure has a duration where climate change has to be considered when alterations to the system are planned. Also, models for urban water management are reaching a very high complexity level with e.g. decentralized stormwater control measures being included. These systems have to be evaluated under as close-to-real conditions as possible. Long Term Statistics (LTS) modelling with observational data is the most close-to-real solution for present climate conditions, but for future climate conditions artificial rainfall time series from weather generators (WGs) have to be used. In this study we run LTS simulations with four different WG products for both present and future conditions on two different catchments. For present conditions all WG products result in realistic catchment responses when it comes to the number of full flowing pipes and the number and volume of combined sewer overflows. For future conditions, the differences in the WGs representation of the expectations to climate change is evident. Nonetheless, all future results indicate that the catchments will have to handle more events that utilize the full capacity of the drainage systems. Generally WG products are relevant to use in planning of future changes to sewer systems.

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