



## **Variable water transit times under steady-state storm flow conditions in the Gårdsjön G1 catchment**

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We report on a series of replicated tracer experiments with deuterium conducted under exceptionally controlled, steady-state storm flow conditions at Gårdsjön in SW Sweden. The Gårdsjön G1 catchment was covered by a roof underneath which natural throughfall was replaced by artificial irrigation with a pre-defined isotopic composition. For four tracer experiments in a subcatchment of G1, deuterium was applied as a narrow pulse so that probability density functions of water transit times could be directly inferred from the observed tracer breakthrough curves. Significantly different water transit times and hence flow paths under similar experimental conditions were observed. Differences were unrelated to both steady-state irrigation and evapotranspiration rates during the experiments.