



## **Connecting climate variability to the water levels of Lakes Michigan and Huron**

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The water levels of Lakes Michigan and Huron have been monitored since 1865, and numerous attempts have since been made to connect their variations to potentially predictable large-scale climate modes. In the present study, the levels are analyzed after outflow-related damping effects were removed, increasing the transparency of the lake-level fluctuations and potential climate connections. This filtering exposes a large oscillation which is connected to the Atlantic Multidecadal Oscillation (AMO), and a  $\sim 27$ -yr periodicity that is likely resulting from the intermodulation of two near-decadal cycles originating in the North Atlantic region. While the lake-level fluctuations prior to 1980 were predominately driven by changes in precipitation, it is now found that for the first time in our years of record, evaporation has begun to significantly contribute to lake-level changes. Summertime evaporation rates have more than doubled since 1980 as a result of increasing water-surface temperatures, which are significantly correlated with decreasing wintertime ice cover.