



Low frequency response of the lake level on climate effects

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From the historical water level gauge records in Great Lakes, the long periodicity can be found by simply checking the epoch of the lowest water level using 100-year records as well as detected in global mean sea level changes. This low frequency could significantly affect the local water supply and ecosystem; however, it can not be recognized in climate and hydrologic models or in situ data. In this study, a novel technique, Ensemble EMD method, is therefore used to analyze the low-frequency spectrum of water gauge data in Great Lakes and Lake Winnipeg. The estimated frequencies in different lakes will be particularly compared and discussed.