Periodicity Analysis of Long-Term Waterquality Data Series of the Hungarian Section of the River Tisza Using Morlet Wavelet Spectrum Estimation

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Abstract : The River Tisza is the second largest river in Central Europe. In this study, Morlet wavelet spectrum (periodicity) analysis was used with chemical, biological and physical water quality data for the Hungarian section of the River Tisza. In the research 15, water quality parameters measured at 14 sampling sites in the River Tisza and 4 sampling sites in the main artificial changes were assessed for the time period 1993 - 2005. Results show that annual periodicity was not always to be found in the water quality parameters, at least at certain sampling sites. Periodicity was found to vary over space and time, but in general, an increase was observed in the company of higher trophic states of the river heading downstream.

Keywords : annual periodicity water quality, spatiotemporal variability of periodic behavior, Morlet wavelet spectrum analysis, River Tisza

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