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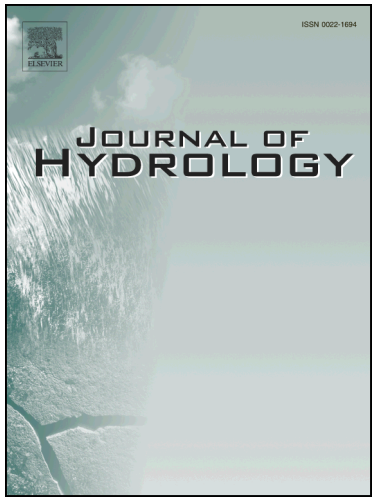

Research papers

Spatio-temporal variational characteristics analysis of heavy metals pollution in water of the typical northern rivers, China

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Spatio-temporal variational characteristics analysis of heavy metals pollution in water of the typical northern rivers, China

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Abstract: The rapid urbanization and industrialization in developing countries have increased pollution by heavy metals, which is a concern for human health and the environment. In this study, according to the data obtained from the monitoring stations in the Songhua River basin, the multivariate statistical analysis methods are applied to the hydrological data of the Songhua River basin in order to examine the relation between human activities and the spatio-temporal change of heavy metals (Pb and Cu) in water. By comparing the concentrations at different flow periods, the minimum Pb concentrations are found to have occurred most frequently in low flow periods while the maximum values mostly appeared in average flow periods. Moreover, the minimum Cu concentration in the water frequently occurred in high flow periods. The results show there are low Pb and Cu concentrations in upstream and downstream sections and high concentrations in mid-stream sections, and high concentrations are most frequently measured in the sections of Ashihe' downstream and estuary. Moreover, we have predicted the future (during 2018-2025) trend of the change for the heavy metals pollution in the rivers. The results demonstrated intense

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