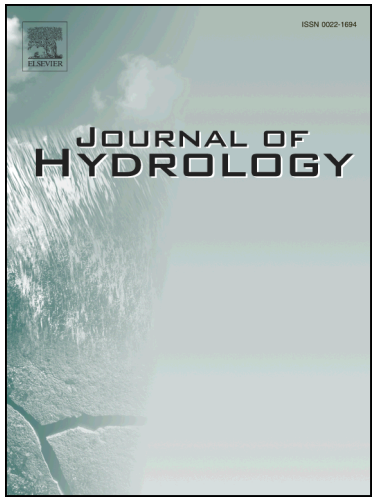

Research papers

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Effects of irrigation-induced water table fluctuation on arsenic mobilization in the unsaturated zone of the Datong Basin, northern China

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ABSTRACT

High level of arsenic-containing groundwater has been used for irrigation purposes for several decades in Asia, leading to fluctuating water table and redox conditions in the unsaturated zone, thereby potentially affecting the mobilization of arsenic in the unsaturated and saturated zones. A field plot experiment was conducted in the arsenic - affected area of the Datong Basin, China to determine the effects of irrigation return flow on the hydrogeochemical behavior of arsenic and iron in the unsaturated zone. High-arsenic groundwater was extracted from a shallow aquifer far from the irrigation site and used as irrigation water. Soil water/shallow groundwater