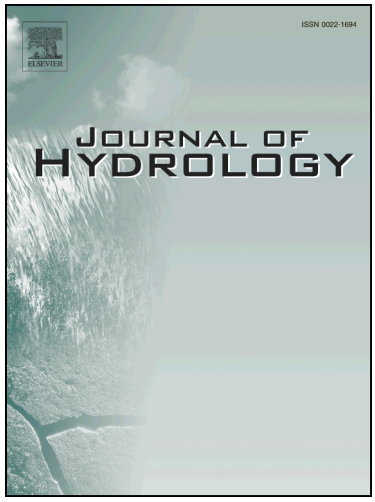

Research papers

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Investigating the effects of irrigation methods on potential groundwater recharge: A case study of semiarid regions in Iran

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Abstract

Water saving irrigation systems (e.g. drip and sprinkler) conserve water but they can reduce potential groundwater recharge (PGR) over traditional systems (e.g. furrow) and may impair sustainability, particularly in arid and semi-arid regions. This study used a hybrid (experimental and numerical) approach to determine the effects of different irrigation systems on the dynamics of PGR in a semi-arid region. A 210-cm tall, 300-cm long and 150-cm wide soil column was prepared to simulate the soil environment of the Karaj region in Iran. A range of soil and environmental properties were monitored during a winter wheat cropping season (~140 days) under different irrigation systems (treatments). Soil water content and drainage were measured