

Fairly Irrigation Water Distribution between Upstream and Downstream Water Users in Water Shortage Periods

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Abstract : Equitable water delivery becomes one of the main concerns for water authorities in arid regions. Due to water scarcity, providing reliable amount of water is not possible for most of the irrigation districts in arid regions. In this paper, water level difference control is applied to keep the water level errors equal in adjacent reaches. Distant downstream decentralized configurations of the control method are designed and tested under a realistic scenario shows canal operation under water shortage. The simulation results show that the difference controllers share the water level error among all of the users in a fair way. Therefore, water deficit has a similar influence on downstream as well as upstream and water offtakes.

Keywords : equitable water distribution, precise agriculture, sustainable agriculture, water shortage

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