

Interactive comment on “A novel data-driven analytical framework on hierarchical water allocation integrated with blue and virtual water transfers” by Liming Yao et al.

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The paper presents an interesting and innovative approach: the combination of game theory models to address water sustainability, what is applied to a case in China. For this reason the paper could be accepted for publication with the following contributions: (1) Two types of conflicts among one leader and multiple followers in the water resource management system are analyzed, which helps optimize the water allocation, withdrawal and transaction processes more comprehensively. (2) A novel game-theory model based on the Stackelberg game and Nash-Harsanyi equilibrium is developed for resolving the “leader-followers” and “competing followers” conflicts by strategic in-

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teraction. (3) Having incorporated the concepts of blue and virtual water transfers, our model is able to further relieve the water scarcity stress and offers insights on crop planting and import/export quantities.

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