Hydrol. Earth Syst. Sci. Discuss., 12, C2431–C2432, 2015
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Hydrology and Earth System Sciences
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Discussions

Interactive comment on "Transit times from rainfall to baseflow in headwater catchments estimated using tritium: the Ovens River, Australia" *by* I. Cartwright and U. Morgenstern

Anonymous Referee #1

Received and published: 8 July 2015

The paper presents an interesting approach to catchment transit time estimations and the relation of transit time to catchment properties and flow paths. The possibility to use Tritium as an age indicator (in this way only possible in the Southern Hemisphere so far) is a novel aspect to catchment water ages and has only been used in few studies so far. It is a significant advancement in understanding catchment responses to climate changes as well as anthropologically induces changes such as land-use.

The paper is well presented, clearly written and the hypothesis, results and interpretations are consistent and well argued. The amount and quality of figures is adequate for such a paper.

My only criticism lies with constraining the Tritium input function. Having a high resolution Tritium rainfall data is difficult and costly to assess, however, the paper would benefit with one or two more sentences discussing the possible uncertainties involved with a lag of a high frequency input function. I could imagine that tritium would undergo significant variability with rain event magnitudes, altitude and changes in atmospheric circulations.

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 12, 5427, 2015.