

From Referee #4

P6, L7: Is there a question of time step or bin interval? It seems to me that for very fine bin intervals, it is possible to have transit time pdf with a mode very near $t = 0$ and hydrologically this will not result in transport that is very different from an L shaped distribution. The other issue is that often continuous pdfs of transit time are actually implemented discretely in time such that for times near zero, they may be indistinguishable from L-shaped distributions like a gamma with $\alpha < 1$.

Yes – this is very much related to bin interval. For both fine bin intervals and also continuous pdf expressions modes may be located near to zero, making little difference to any modelling process, as was noted in other responses. This would apply even more so if comparing cumulative distribution functions. The argument against the use of L-shaped distributions in such situations is purely on the basis of appropriate form – summarised in the cited comment by Kingman.

From Referee #5

specific comments: I could not find an error in (11)

This was discussed in responses to other reviewers and was not revisited here,