Review of “On the use of spring baseflow recession for a more accurate parameterization of aquifer transit time distribution functions.”

By Farlin and Maloszewski

General Comments

The paper provides an excellent overview of the worth of combining two types of baseflow separation techniques. The paper provides a significant contribution by “calibrating” the proposed model to both discharge recession and tritium concentrations and then providing an additional “verification” step by comparing the results to observed atrazine concentrations.

The paper is well written, concise, and ultimately provides a significant contribution to the field of baseflow recession and groundwater dating analysis.

Specific Comments

1. Page 14112, line 9: remove “fall under”
2. Page 14114, line 9: The authors note that the best fit model is obtained by minimizing the error between modeled and observed concentrations. It would be helpful to briefly discuss the applicability of automated inversion algorithms (e.g. PEST) for this application. In other words is the objective function (error function) well behaved such that automated techniques work well.
3. Page 14115, line 12: The term “double porous systems” is introduced, but should be clarified. Is this a double porosity system in which solutes may diffuse into a non-advecting space?
4. The uncertainty intervals presented in Figures 3 and are not clear. How were these intervals calculated and at what significance level?
5. Page 14120, lines 1 -2: Not sure what is meant be “influence recession.” Influenced by precipitation. This sentence needs to be clarified.