We would like to thank the reviewer for the feedback and the suggestions to improve the manuscript. Here, we respond to each comment (in bold).

This is an interesting article and essay about an approach that may find its place in practice. It aims to subdivide total (merged) baseflow (slow flow) into its possibly different components.
Thanks for this general comment.

The title, however, appears slightly high-handed. This enhanced application of the smoothed minima method will hardly replace other baseflow separation methods; hence it is not "beyond" but may be "besides". The splitting of flow contributions is a fresh idea, but not a new one. Also, the term "delayed flow" appears problematic. A delay is normally a time shift which cannot really describe the inflow-outflow (retention) processes of reservoirs (aquifer, snow, lakes. . .).
We do not intend to replace any baseflow separation method. We argue that going beyond binary baseflow separation might be valuable for certain applications (e.g. in catchments with more than two dominant streamflow contributions or in highly seasonal regimes).
We suggest a new, more condensed title for the paper: Beyond binary baseflow separation: a delayed flow index for multiple streamflow contributions.
The term "delay" is used as a more generic term (not related to a particular process) to describe the response patterns of different contributions (aquifer, snow, lakes) on the dynamic of the hydrograph: a short-delayed contribution is water that is moving quickly through the hydrological system controlling the peaks of the hydrograph, a long-delayed contribution is moving more slowly controlling the tailing and recession behavior of the hydrograph). Schwarze et. al (1989) have also used the term "delayed long-term base flow".

The paper is not easy to read. Many formulations could be straighter forward. Lines 66-77: This section gives the impression that hydraulic processes are not fully understood. Aquifers act as reservoirs discharging baseflow according to hydraulic head (pressure) and rather not "water that is moving slowly. . ." (line 70). Skip or rewrite. Also, the many abbreviations (e.g. in chapter 4.1) and awkward formulations in chapter 5 make reading difficult.
We will revise the mentioned sections to improve the readability, especially with a focus on abbreviations and the fast- and slow-flow concept. The quote "water that is moving slowly through the hydrologic system" is from Kronholm and Capel (2015) and used to explain the concept of slow- and fast-flow.

The proposed method is built on the IH-UK smoothed minima method following the philosophy of former respective research work performed in Freiburg at the institute of three of the authors under the denomination Wundt/Kille-Demuth method (Demuth, 1989). It is an empirical, statistical approach to only detect and describe the effects of storage in aquifers etc. on streamflow and does not model the hydraulic processes. Baseflow separation methods based on reservoir algorithms are not even mentioned in the present paper though they are the closest to physics and hydraulics.
A full review of existing baseflow separation methods is beyond the aim. However, we will add a short list of other (incl. reservoir-based) baseflow separation methods and corresponding review papers.

Line 78 and others: Write Hollick instead of Hollwick.
Will be corrected.

Abstract and other places: The authors criticize contemporary "binary" baseflow separation methods "for their arbitrary choice of separation parameters". This is not quite an objective argument. So, like "the DFI is based on characteristic delay curves. . .", other baseflow separation models are calibrated with observed flow recessions and yield good results.
In order to derive a BFI value many studies use the IH-UK method with the same block size of N=5 or recursive filters with a given parameter a (often a=0.925, cf. Nathan and McMahon, 1990, Eq. 3). We will rephrase, emphasizing that the parameters are most often not adjusted to the hydroclimatology of a specific region.

The authors probably used data of a number of the same stations as their colleagues in Bern, Switzerland (Meyer et al.2011), who report: "Three different procedures to separate baseflow are applied in 59 catchments in Switzerland. The results show a good coherence of baseflow with well-known storage processes". Why not have a look?
We were aware of this publication and we like the comparison of different separation methods. Unfortunately, the publication is in German language, but has an English abstract, we will refer to the study in a revised version. Indeed, Meyer et al. highlight considerable differences (Fig. 3) in the derived BFI values depending on the used method (in principle the same outcome as Partington et al., 2012, Fig. 6): All baseflow separation methods are sensitive to the choice of parameter values and therefore hardly comparable unless assessed for the same catchments and record period. For instance, the Demuth method is known to be stricter in separating baseflow and leads consequently to lower BFI values compared to IH-UK or the Wittenberg method (Meyer et al., 2011).

The authors criticize baseflow separation methods because they "merge different delayed components". Reservoir based separation methods were applied for distinguishing and quantifying different contributions, two examples: Schwarze et al. (1989) created a model of parallel linear reservoirs representing different contributing aquifers or storages. Wittenberg (2003) distinguishes with his nonlinear reservoir method groundwater outflow, groundwater evapotranspiration, abstraction. Is the present method only or particularly suited for regional studies since a linking of flow contributions to catchment characteristics is needed?
We will rewrite the manuscript to highlight the added value of allowing additional components (in terms of response times). If, as Schwarze et al. (1989) suggested, a modelling approach with two parallel groundwater boxes is more appropriate to simulate flow in catchment, then still the question arise what kind of water will go in which (groundwater) box? A distinct source identification is still not possible even if two instead of one groundwater box is used. We totally agree that differences in the hydrological response of catchments should be reflected in the conceptualization of hydrological models (i.e. variation of model structures for different groundwater flow paths as in Stoelzle et al., 2015). We will reflect on physical/conceptual based modelling approaches (and the mentioned studies above) and the role of aquifer storage in the revised manuscript.

Line 485: Groundwater recharge does not need saturated soils. Infiltrating water passes the vadose zone via preferential pathways.

Yes, Reviewer 2 has the same concerns, we will revise the manuscript accordingly.

Demuth, S. The application of the West German IHP recommendations for the analysis of data from small research basins. Friends in Hydrology, IAHS Publication No. 187, 43-60, 1989

Meyer, R., Schädler, B., Viviroli, D., Weingartner, R. Die Rolle des Basisabflusses bei der Modellierung von Niedrigwasserprozessen in Klimaimpaktstudien. (The role of baseflow in modelling low-flow processes in climate impact studies). HyWa 55,5,244-257, 2011.

Schwarze, R., Grünewald, U., Becker, A., Fröhlich, W. Computer aided analysis of flow recessions and coupled water balance investigations. Friends in Hydrology, IAHS Publication No. 187, 75-83, 1989.

Wittenberg, H. Effects of season and man-made changes on baseflow and flow recession: case studies. HProc 17, 2113-2123, 2003.

We thank the reviewer for the suggested studies. We will evaluate the value of the suggested references to improve the paper.

Additional references:

Partington et al. (2012): Evaluation of outputs from automated baseflow separation methods against simulated baseflow from a physically based, surface water-groundwater flow model. Journal of Hydrology, 458, 28–39.

Stoelzle et al. (2015): Is there a superior conceptual groundwater model structure for baseflow simulation? Hydrological Processes, 29, 1301-1313.