This paper investigates the way drought event can be identified in defined hydro-meteorological time series. The authors suggest different manners to compute the threshold under which a drought occurs and apply them to a reduced set of gauged basins located in Europe. The paper is short, concise and well written.

However some aspects should be developed further before publication. Some general conclusions are drawn but they are not clearly supported by materials presented here. Visual inspection should be combined with more objective analysis (e.g. number of partly overlapping droughts, seasonal analysis, etc.) on an extended dataset (including more events and more basins).

Details:

L10, P12768: "A fixed threshold... minimum flows". Are you sure? It is a convenient way to define environmental flow. I am not sure that it is relevant since tolerance to discharges is dependant to the fish life stage. Please, add references on this point.

L13, P12769: It is definitively not a performance analysis; it is a sensitivity analysis.

L8, P12770: The five basins could not be representative of all the possible drought conditions, e.g. there is no tropical river basin in this dataset. Please add information on the river flow regime (at least graphs showing the monthly runoff pattern).

L25, P12770: How do you define "a very long time series"? I suppose that a minimum record length is required. Are the studied stations long enough? Records for the Narsjo river basin are available from 1958 to 2007 whereas the record length for the Upper Metuje is shorter (1982-2005) (Table 1, Van Loon and Van Lanen, 2012). I am not convinced that introducing the distinction between short and long time series is relevant here. If it is, let us know what to do when long time series are studied.

L21, P12271: "long term monthly data ==> "monthly data"

L8, P12773: "monthly time window" ==> "30 day time window"

L16, P12773: The D_HH procedure is unclear. Since "a variable threshold level calculated with the use of a Fourier transform" (L28, P12779), this section needs to be developed (technical details, assumptions, optimization procedure to define the cut-off, etc.)

L11, P12774: There are strange oscillations on the graph. Why? No smoothing procedure was applied. Why?

L17, P12774: We do not know if calculations were made on observed discharges or on the outputs of the rainfall runoff model. Both should be presented and results should be discussed.

L20, P12774: What is the actual time series?

L23, P12774: I do not understand why small events are first withdrawn; pooling small events may lead to droughts with duration above 15 days. There is maybe a bias in the procedure. Could the authors justify the order of the steps?

L15-20, P12776: Why introducing here the real-time context?

L15, P12777: Van Loon and Van Lanen (2012) have introduced six drought types. Sensitivity to the choice of the threshold is discussed on four examples representative of four types. In the conclusion, the authors consider that "the six drought types [...] were reproduced". There is no support to this conclusion. In addition, more events should be analysed in a systematic way to derive statistics and to allow quantification.

L11, P12780: There is no quantification of the differences presented here that could be helpful for other applications.

L13, P12780: "This contradicts... compared." I do not find any contradiction with the previous studies. The authors have considered only one percentile (here it has been fixed to 80th).