

## ***Interactive comment on “Co-evolution of volcanic catchments in Japan” by T. Yoshida and P. A. Troch***

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This comment is not intended as a full review of Yoshida & Troch's manuscript on the co-evolution of volcanic catchments in Japan. It is only intended to provide some suggestions that may lead to improvement of the manuscript.

1. Currently, your only descriptor of climate is the aridity index. While this is a very useful and extensively used climate descriptor it ignores any intra-annual variability of the climate signal. This intra-annual variability of climate can have a strong influence on the flow regime (and this results of this study). It would be a valuable addition to the manuscript to make a description of the seasonal climatology of the catchments, and highlight if these seasonal patterns are the same for all catchments. If there are

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strong regional differences in climate seasonality (e.g. rainfall seasonality and timing, snow vs. rain) between the catchments, I do not think that only looking at the long-term mean value (aridity) is a sufficient descriptor of the regional differences in climate.

2. The catchments range in size from 30.9 to 635.0 km<sup>2</sup>. Is this a factor to consider in explaining differences (in flashiness) of hydrologic response? For example the base-flow index (since this is determined by a low pass filter) might be strongly affected by catchment size?

Overall I enjoyed reading this manuscript.

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Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 12, 9655, 2015.

**HESSD**

12, C3868–C3869, 2015

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