

## ***Interactive comment on “The Normalized Difference Infrared Index (NDII) as a proxy for soil moisture storage in hydrological modelling” by N. Sriwongsitanon et al.***

**Anonymous Referee #1**

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This is an interesting article assessing the link between the Normalized Difference Infrared Index (NDII) and soil moisture storage for hydrological applications. It is of interest for HESS Readers, however as it is I am confused with the objectives of the manuscript. It seems to me (but Authors might want to correct me) that sometimes concept of root zone soil moisture and soil moisture storage are unclear. I believe that e.g. Numerical Weather Prediction and Hydrological communities are not exactly after the same information, the root-zone water storage or its variability, i.e. the day-to-day variability or the medium/long terms variations (?) That is why I believe major revisions are required, my main concern are listed below:

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Major

\*Clarify the objectives; NDII as a proxy root zone soil moisture variability / storage. For example References used slide 8433 (Albergel et al., 2008, Ford et al., 2014, Reichle, 2008...) are not for the same applications that the one you are targeting, then the comparison is not easy. [The use of surface observations in Land Data Assimilation System (that propagates the surface observations into deeper parts of Land Surface Model) is omitted also. ]

\*Choice of the evaluation metrics. I am not certain that the coefficient of correlation is the best metric to assess this work. It is known to be artificially increased in case of a strong annual cycle [as illustrated by figures 7 and 8]. The use of 8-days data is also in favour of this increase. Maybe that other metrics like the Nash-Sutcliffe efficiency would be more adequate.

\*Discussion of the results; Readers are too often referred to Tables and figures, results are not enough discussed in the text

Other

- Better justify the use of the FLEX soil moisture as a reference - Carefully list all the acronyms - indicate last access to websites

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