

Interactive comment on “Does NDVI explain spatial and temporal variability in sap velocity in temperate forest ecosystems?” by Anne J. Hoek van Dijke et al.

Anonymous Referee #2

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This study investigates the relationship between sap velocity and Landsat-derived NDVI measurement for two different growing seasons in a temperate deciduous forest catchment in Luxembourg. In addition to NDVI, EVI is also used to overcome the NDVI saturation problem. But gives similar results (L 359-361). Results show that in early growing season, there is a positive correlation between NDVI and sap velocity; however, for the rest of the growing season, there is a negative correlation.

This is an interesting study for the ecohydrology community; however, the results should be interpreted carefully.

Based on Figure 5, phenology of the deciduous forest shows that there is a greening

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period till May or Jun; then either full canopy or -still- slight grow during the summer, and a leaf off period after September. From May till October, NDVI values are higher than 0.8 which is notorious for NVDI saturation (Huete at al., 2002 Fig. 12).

- So, the phenology may give a chance to us only capture the growth period!?! That's why there is a linear relationship between NDVI and sap velocity in this greening period.
- When saturated, daily fluctuations in sap flow cannot be captured with NDVI values. I do not think NDVI varies day to day that much. In another saying, today there is less sap flux, let's drop leaves tomorrow more, let's leaf out. That's why it is intuitive that during the summer there is no relationship between two. In my opinion, my saying is in line with your comments about NDVI measurement in Aug 2015 (L207-210), you do not assume NDVI does not fluctuate that much within a narrow time frame.

I recommend a native speaker should read the manuscript, for punctuation, especially comma usage (Oxford comma (i.e., L43, L203), connecting two independent clauses (i.e., L37, L58, L90, L111, L116, L135, L190, L222, L410) or after introductory phrases (i.e., L84, L252)) and dash usage (i.e., L363, L380, L409). Please check the following: L101. Upper case. ...the Ardennes Massif and the Paris Basin. L198. Caption of Figure 5. Verb. The grey line and dots represent the. ... L258. Caption of Figure 8. Typo. Relationship. ... L340-3. This sentence can be split into two sentences. L397. Word class, use 'verb' form. Replace effects with 'affects'. Also add 'fullstop' to the end of Table captions.

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., <https://doi.org/10.5194/hess-2018-596>, 2018.

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