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Interactive comment on "A 424-year tree-ring based PDSI reconstruction of *Cedrus deodara* D. Don from Chitral HinduKush Range of Pakistan: linkages to the ocean oscillations" *by* Sarir Ahmad et al.

Anonymous Referee #2

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Ahmad et al. presented a reconstructed PDSI time series from tree-ring record for the HinduKush Range of Pakistan where such record is limited. This study will be valuable for understanding long-term drought dynamics in these regions. The method is typical for this type of research, statistical analyses are sound, and results are checked with existing studies. Overall, I find this study is publishable after addressing the following concerns.

1. The logic flow of introduction section is very unclear. The second paragraph is hard to follow. From line#58-61, it is hard to follow why "their distinct and complex

topography, …….., and uniquie precipitations seasonaility" makes tress in HKH "important"? In addition, what is the purpose of mentioning the hydroelectric reservoir? What is the purpose of comparing 4% from government and 2% from FAO? Moreover, from Line#73-75, why susceptible to ET, soil and air temperature, air humidity, and soil moisture makes tree ring highly recommended for dendroclimatic studies? I highly recommend authors fill in these missing logic links to improve readability. 2. Line#153. Do you have a reason for reconstructing March-August PDSI rather than other period or for the annual mean PDSI? This should be explained in the main text. 3. Line#166-168. Do you have a reason for choosing 1 standard deviation to identify drought/wet periods? Please explain. In addition, the purpose of the second sentence "We assessed the dry and wet periods for many years based on strength and intensity" is not clear to me. 4. In Fig. 5, the 1960-2016 is relatively dry. This could bias your regression equation at Line#198 towards the dry end. I think this is the reason why the mean of your reconstructed PDSI before 1960 is negative rather than zero. How did you correct this dry bias? Please explain and add discussions on how this dry bias would affect your drought identification and conclusions. 5. Figs. 6 and 8 are unreferenced in the main text. Please correct. In addition, please consider add more explanations for these two figures. Currently, it is unclear how these two figures support the flow of your discussions.

The English of this manuscript needs to be polished. The following are a list of errors that I caught. âĂć Line 48, lacking an "and" before "increases risk of wildfires". âĂć Line 57, 80% to 60% of what? âĂć Line 63, replace "in the form of" with "from" âĂć Line 169, remove "a" before "few", remove "still". âĂć Line 185-187, please consider decompose this long sentence into smaller ones. âĂć Line 308, is "weather" a good word for climate-related studies?

Interactive comment on Clim. Past Discuss., https://doi.org/10.5194/cp-2019-62, 2019.