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of the Past

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Interactive comment on "Climate records in ancient Chinese diaries and their application in historical climate reconstruction – A case study of *Yunshan Diary*" *by* Siying Chen et al.

Anonymous Referee #1

Received and published: 8 June 2020

This is a detailed analysis that extracts a lot of information from a relatively short diary. I certainly recommend its publication. I have recommended major revisions only due to the comment below, which will require a small amount of new analysis:

The justification for selection an intercept of 0 for the regression equations is undermined by the observation that rainfall can occur even when it is not observed by humans. I suggest re-calculating the regressions. I don't imagine this will change the conclusions or affect the analysis much, although figure 2 will need to be redrawn.

Otherwise my points are relatively minor:

Line 33 – please define 'ancient diaries'

Line 56-58 – give a summary here of the key findings.

Lines 89-91 – it's not clear to me what this delineation of four categories is adding, given that the information from the diary are then delineated into four different. Please either clarify or consider removing this sentence.

Lines 128-129 and 368-372 – you need to define what you mean by the MWP (and LIA) before you use this term for the first time. Please move the section in lines 368-372 into the opening sections of the paper.

Section 3.2 – This section is misleadingly titles. Phenology is the seasonal timing of biological phenomena, whereas this section also looks at first and last snows. A more accurate title would be something like 'climate-dependent phenomena' or 'documentary proxy data', both of which would include phenological records.

Lines 229-230 – Please give the justification for this threshold of 20 days

Table 3 – If you are going to express P values to 4 significant figures, please express 0.000 as >0.001 – P = 0 is a misnomer. Please explain why February, July and December are missing here (i.e. before Figure 2)

Lines 255-259 – this is a good point, but it rather undermines the decision to put the intercept of the regression equations through zero, since R = 0 does not necessarily equate to P = 0. I suggest you redo your regression equations. Clearly if you're getting ridiculous intercepts (e.g. P = 100 mm) then you may be justified to force the intercept through zero, but you then need to be clear that this is what you are doing.

Line 361 – Remove the sentence 'This is an exceptionally unique case'. You don't really have the evidence to say that, it could have happened many times between 1309 and 1955.

Lines 362-366 – I think you have to be very careful in assuming climatic changes when you only have the weather for a couple of years. Please give detail of the analysis and findings in Zheng et al. (2005), otherwise it's difficult to say whether your inference is

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justified.

Lines 409-424 – this mostly repeats what was in the opening sections, and can either be significantly shortened or removed altogether.

Interactive comment on Clim. Past Discuss., https://doi.org/10.5194/cp-2020-72, 2020.

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