

Interactive comment on “A database of water and heat observations over grassland in the north-east of Japan” by Wenchao Ma et al.

Anonymous Referee #2

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General comments Paper describes a useful long term dataset and I think the authors have put a great deal of work into data management.

I have slight concerns about the doi'd 'Asset' data: <http://www.ied.tsukuba.ac.jp/en/edps/database-doi/> which are available as .dat files because .dat files need processing and do not contain header rows; indeed the headers for this data need to be added separately. Why did the authors not publish the data as MS Excel in the same way that the data available from the ESSD supplement (daily data) - opens with no processing and contains a header row. This may just be my preference and still think it's a valuable dataset.

Specific comments

I have had to remove “the” in the manuscript where it spoils the flow of words. I have
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attached these comments as a supplement pdf.

Technical corrections Page 1 Line 10 from a well maintained Line 11 include short-wave radiation, air and dew point temperatures at three elevations, soil temperature Line 12 depths, sensible shortwave, net radiation, air and dew point temperatures at three elevations, soil Line 13 depths, sensible heat flux Line 14 includes four Line 15 presented here. Monthly Line 17 We validated the data by Line 22 and percent bias Line 23 values show a positive trend in precipitation Line 24 over the past 37 years with a negative trend detected for wind speed Page 2 Line 1 historical Line 3 from a well-maintained Line 11 for estimating actual Line 13 the effect of Line 19 - 21 Consider revising sentence. I don't understand what you mean Line 21 the understanding Line 22 Yamanaka et al. (2005) carried out quality control of the data Line 23. Validation of the water Line 25 Consider revising sentence. I don't understand what you mean Line 26 In addition, latent heat flux was assessed by Line 27 with flux behaviour Line 28 into temporal variation, and an assessment of measurement accuracy Line 29 not only above ground, but also within the soil layers, have Line 31 observations of soil temperature Page 3 Line 1 A wide variety of studies on ecology and vegetation were conducted Line 4 (1989) estimated turbulent fluxes using the eddy-covariance method to investigate the effect of forest and vegetation Line 6 Being a well maintained observation site, the grassland provides Line 9 conducted experiments to investigate the biomass and Page 4 Line 6 site consist of a grass covered circular field, 160m in diameter at an altitude of Line 7 at a height of 30 metres Figure 1 I can't read the axis titles or legend on (d) Line 17 top few metres – can you be more exact here? Page 5 Line 1, 2, 3 vegetation names need a capital for first word e.g. Imperata cylindrica and please check spellings for accuracy; please retain italics Lines 4 and 5 The similarity of grass species, depth, and leaf-area index (LAI) were confirmed annually by two different surveys. Line 4 to 9 – are these the two surveys. This is a bit confusing because it states each year on line 4 and then 'two years later' on line 7. Consider revising paragraph to make it clearer. Line 10 The grass is mown twice per year (summer and winter since 2006); dead plants and grass clippings are redistributed.

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Table 1. would be best viewed on one page please Page 6 Line 15 The data are freely available for download from the Center for Research in Isotopes and Environmental Dynamics (CRIED) website (<http://www.ied.tsukuba.ac.jp/en/edps/database-doi/>) (formerly known as TERC) as hourly, monthly and annual summaries. Since 2003, the temporal resolution is at 10 second, 30 minutes, 60 m and 24 hour intervals. When calculating averaged data (Asanuma et al., 2004) at least 24 records at 30 m were required. Readings with less than 20 records were discarded and data with between 20 and 24 records were annotated as incomplete (Ohba and 20 Yamanaka, 2007). In addition to the missing data, dates of equipment maintenance, construction and mowing information are recorded in the maintenance log (http://www.ied.tsukuba.ac.jp/yosoku/kansoku/hojyo_log/).*Page9.Line2.Dataqualitywascheck*

In the data provided as ESSD Supplement: Column heading spelling mistake: Air tempearture should be $Air_{t,temperature}$

Please also note the supplement to this comment :

<https://www.earth-syst-sci-data-discuss.net/essd-2018-58/essd-2018-58-RC3-supplement.pdf>

Interactive comment on Earth Syst. Sci. Data Discuss., <https://doi.org/10.5194/essd-2018-58>, 2018.