

Atmos. Meas. Tech. Discuss., referee comment RC2
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Comment on amt-2021-375

Anonymous Referee #1

Referee comment on "Estimating vertical wind power density using tower observation and empirical models over varied desert steppe terrain in northern China" by Shaohui Zhou et al., Atmos. Meas. Tech. Discuss., <https://doi.org/10.5194/amt-2021-375-RC2>, 2021

General comments:

This study compared three wind speed distributions of kernel, Weibull, and Rayleigh type for estimating average wind power density under varied desert steppe terrain contexts. Three key parameters of scale factor (c) and shape factor (k) from the Weibull model and surface roughness (z_0) were investigated for estimating wind energy resource. Authors pointed that the key parameters (c , k , and z_0) should be accurately considered for estimating wind energy resources under varied desert steppe terrain contexts. The work is interesting and informative for wind energy evaluation. The manuscript is well organized but need proofreading by native speakers. I recommend minor revision.

specific comments / technical corrections

- Line 52. Citations format. "(Chang, 2011a) used six ..." should be "Chang (2011a) used six ...". The same for other citations.

- Line 116. Change "The average daily wind speed" to "The daily averaged wind speed".

- Line 200. I think your precision is too high here. A single decimal place is probably all you can state here. The same for line 218.

- Table 1 and 2. What is the information of the shading. In fact, it is hard for readers to get information from this kind of table.

- Figure 2c. A curve of monthly averaged wind speed added is more informative.

- Figure 4. The x-label should be WS_{70} ($m s^{-1}$). Season and year information should be texted in each plot.

- Figure 5. No need to give x-axis tick-labels in every plot as all plots used one x-axis. The font size needs to be unified for all the labels. The word "period" is not needed.

- Figure 6. The x-label is not "Altitude", it should be Height (above the ground level). What is the unit for x-label? The x-tick label should be 10, 20, 30, 40, ... , 100.