

Biogeosciences Discuss., community comment CC2
<https://doi.org/10.5194/bg-2022-50-CC2>, 2022
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Comment on bg-2022-50

Zhaoguo Wang

Community comment on "Excess radiation exacerbates drought stress impacts on stomatal conductance along aridity gradients" by Jing Wang and Xuefa Wen, Biogeosciences Discuss., <https://doi.org/10.5194/bg-2022-50-CC2>, 2022

This study of the impacts of stress factors and plant traits on stomatal conductance along aridity gradients is critical and timely. It represents a lot of work and will make a good addition to the literature, but there are some aspects that can be improved.

1 There are expressions like "drought", "dryness", "low soil moisture" and "soil moisture stress" in this manuscript. I don't think these have the same meaning. Please check and use it properly. Similarly, this manuscript focused on g_s , but sometimes there are expressions like "canopy g_s ".

2 I think hypothesis should be based on the information provided in the introduction. In terms of the hypothesis 2 "excess solar radiation and low temperatures will result in differences in g_s among transects", I don't understand how low temperatures will affect g_s according to the information in introduction.

3 The last paragraph should be the last but one paragraph or in the methods.

4 There may be interspecific difference in g_s , so information on plant species and species composition of the three study sites should be provided.

5 The headline of the first part in the discussion should be changed, because the patterns of g_s among the tree transects are similar, but differ in magnitude. In addition, the authors attribute this difference to the temperature-induced changes in photosynthesis, which I don't agree. Indeed, g_s and photosynthesis are closely correlated, for example, to maximize carbon gain and minimize water loss according to the optimal stomatal behaviour. However, in my opinion, the correlation between g_s and photosynthesis is regulated by stomatal behaviour.

6 line 25 delete "at leaf level".

7 line 24 change "in one" and "in the other" into (1) and (2), respectively.

8 I suggest that "interaction effects" may be changed into "interactive effects".