

Geosci. Model Dev. Discuss., referee comment RC1 https://doi.org/10.5194/gmd-2021-258-RC1, 2022 © Author(s) 2022. This work is distributed under the Creative Commons Attribution 4.0 License.

Comment on gmd-2021-258

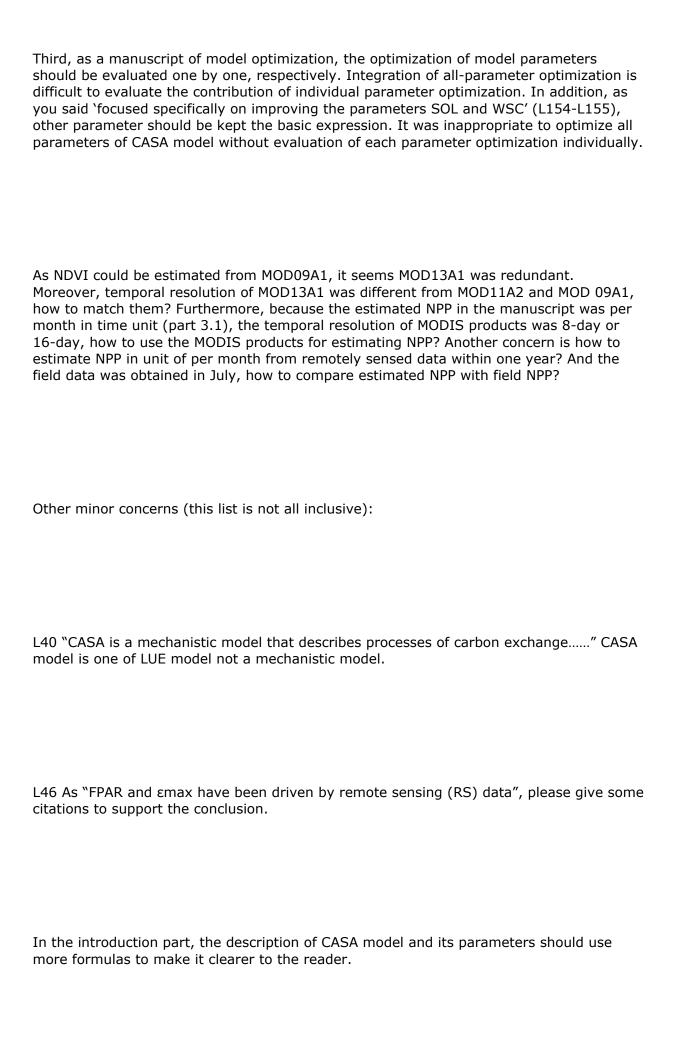
Anonymous Referee #1

Referee comment on "Improved CASA model based on satellite remote sensing data: simulating net primary productivity of Qinghai Lake basin alpine grassland" by Chengyong Wu et al., Geosci. Model Dev. Discuss., https://doi.org/10.5194/gmd-2021-258-RC1, 2022

Model optimization in NPP estimation is more important for improving model accuracy and model development. The manuscript intended to use remotely sensed data to replace ground observations was a good attempt. However, the introduction and methodology were failed to provide an appropriate design and description, the major concern were:

First, as the manuscript planned to MODIS products to replace ground observations data, the authors should summarize the advantages and disadvantages for the replacement of parameters used in CASA model. A comprehensive summary of these parameters from previous researches need to be compared before your chosen. From the view of the present manuscript, the references citations were too limited, and can't offer the reasons why you need to replace the parameters from RS products.

Second, the manuscript used MODIS products to substitute ground observations. As MODIS product has its own uncertainty, have you evaluate the uncertainty of MODIS used in the study region? As far as I know, some Chinese RS products of SOL, land surface temperature, SWC, and FPAR were generated from the view of parameter localization, comparing with MODIS products. Why not choose these Chinese RS products?



L66 Since "A few scholars attempted to introduce RS data for improving WSC,", a comprehensive summary of WSC estimated from RS methods should be concluded here.
L71-72 As the manuscript mentioned "Usually, the spatial distribution of these ground observation points are few and scattered, especially in a small region", how to define the scale of the small region? The study intended to use Qinghai Lake Basin as the study area, is it a small region?
In Figure 1, why the samples of NPP field observation was located around the Lake, with no samples in western mountain area. Is this sample representative? A land cover map showed here will be better to demonstrate the grassland distribution of the study region.
Also, the authors need pay more attention to 'comment on gmd-20210258' (https://doi.org/10.5194/gmd-2021-258-CEC1)