Geoscientific
Model Development
Discussions

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Interactive
comment

Interactive comment on "Short-term forecasting of regional biospheric CO$_2$ fluxes in Europe using a light-use-efficiency model" *by* Jinxuan Chen et al.

Anonymous Referee #2

Received and published: 30 April 2020

The authors have analyzed the uncertainties on the vegetation photosynthesis and respiration model aimed for forecasting the 5 days biogenic CO2 uptake in conjunction with ECWMF weather forecast and MODIS satellite data. The comparison with eddy tower NEE flux at 31 sites over Europe is well organized and describes that meteorological data error has a largest contribution to producing error in NEE and no clear bias over land cover types. I really enjoyed much on reading this paper.

Minor Comments:

Page 4, Line 138-140: Generally, the respiration responds exponentially to temperature. But the authors use the liner function here. I guess that this would affect especially on the diurnal variation in respiration, though the error could be cancelled between daytime and nighttime. Also "vegetation respiration" should be "ecosystem respiration".

Page 4, Line 145: Write the long name for "alpha"

Page 5, Line 179: I like to know the difference between analysis and forecast. Are analysis for past, and forecast for future, though both are anyway estimated by same ECWMF model?

Page 6, Line 215: "the other simulations"

Page 6, Line 217: not "save", but "same"

Figure 4: Title of top panel y-axis should be "s"hortwave radiation.

Tables 3: MAE table for which item? "NEE" Clarify it.

Interactive comment on Geosci. Model Dev. Discuss., https://doi.org/10.5194/gmd-2019-173, 2019.