

***Interactive comment on* “The influence of leaf photosynthetic efficiency and stomatal closure on canopy carbon uptake and evapotranspiration – a model study in wheat and sugar beet” by A. Schickling et al.**

Anonymous Referee #1

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This paper presents field measurements of leaf fluorescence and gas exchange performed over 5 individual days spread over one growing in two crop canopies. These leaf-scale measurements are then compared to ecosystem-scale eddy covariance data. Although this paper represents obviously a substantial amount of work, the results resemble more those from a field experiment training course and, to my opinion, are not worth an original paper, at least in the way these results are currently presented. Indeed, I think the authors lack distance with the datasets and do not go beyond the raw measured time series, and the main conclusions of the paper are very

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poor. We have known for several decades now that "stomatal resistance may have a large impact on the canopy resistance" or that "evapotranspiration mainly depends on incoming radiation" or that photosynthesis or stomatal conductance respond very rapidly to rapid changes in light or vapour pressure deficit. The authors finally propose that "the physiological status of plants in carbon flux models should be included to improve the quality of the simulations of diurnal patterns of carbon fluxes" but, for at least the last two generation of "carbon flux models", this has already been done! I do not mean that the whole dataset should not be published one day, but it will definitely require another story and more spin. For example, the link with the remote sensing community and the fluorescence data could maybe be explored a bit more. But maybe this will require additionnal data as well...

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