

## ***Interactive comment on “Estimating immediate post-fire carbon fluxes using the eddy-covariance technique” by Bruna R. F. Oliveira et al.***

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The manuscript entitled “Estimating immediate post-fire carbon fluxes using the eddy-covariance technique” presents a unique data set of carbon-, water-, and energy fluxes measurements 43 days after a wildfire in Portugal. The ecosystem is/was a Maritime Pine with some Eucalyptus stands inside which were mainly burned and only the trunks of the trees remained. The authors explain broadly their data quality control scheme how data were filtered, selected and gap filled. Based on the data they represent cumulative fluxes of NEE GPP and Reco. Additionally, they focus based on one event on the interactions of dew and ashes with respect to carbon dioxide fluxes. Overall the manuscript is well written, but it could need some polishing on the figures as well on the text where sometimes method parts are in the results and discussion

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parts are in the results. I think this should be cleaned up. Overall, the manuscript is worth to publish especially because we don't have many studies presenting data from ecosystems shortly after a fire disturbance and its recovery. My main concern with the manuscript is that the authors interpret a lot into the eddy covariance data without having the right measurements to back it up. See my comments for details. Further, I think the  $u^*$ -threshold estimation and removal of data with low  $u^*$  values is nothing to debate about as the eddy covariance technique is not working under those conditions and this must be accounted for in the data processing. For further details see the attached pdf.

Please also note the supplement to this comment:

<https://bg.copernicus.org/preprints/bg-2020-312/bg-2020-312-RC1-supplement.pdf>

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