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# *Interactive comment on* "OzFlux Data: Network integration from collection to curation" *by* Peter Isaac et al.

**Anonymous Referee #2**

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The authors present a clear description of the data and processing from the OzFlux eddy-covariance network, which should serve as a go-to for future papers that make use of OzFlux data. I include minor comments below that I hope will help the authors to improve the manuscript. My only major comment is perhaps beyond the scope of the current dataset version, but I would like to emphasize it regardless in the hope that the authors will prioritize it in future efforts. Uncertainty. A variety of approaches exist for the estimation of uncertainty due to random noise and uStar thresholds, but no quantification of uncertainty is included in the current OzFlux data release. Given the importance of knowing what confidence to place in a particular observation I find this very disappointing. I hope the authors will continue their excellent work in the future by including uncertainty estimates for their data.

Abstract, line 23-26: These lines could be removed from the abstract as telling the



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reader that processing used python, netCDF, OPeNDAP, etc is not really necessary at this stage.

Page 2, line 18: Ameriflux was officially formed in 1996, though initial papers did not come out until 1999. I am not sure the Pryor et al. 1999 paper is the most appropriate, as it is just the first paper to come out that uses ameriflux data and has not been highly cited. Other initial papers from Ameriflux that had a larger impact were, for example:

Hollinger et al. 1999: Seasonal patterns and environmental control of carbon dioxide and water vapour exchange in an ecotonal boreal forest, GLOBAL CHANGE BIOLOGY, 5, 891-902 Wilson and Baldocchi, 2000: Seasonal and interannual variability of energy fluxes over a broadleaved temperate deciduous forest in North America, AGRICULTURAL AND FOREST METEOROLOGY, 100, 1-18 Schmid et al. 2000: Measurements of CO2 and energy fluxes over a mixed hardwood forest in the mid-western United States AGRICULTURAL AND FOREST METEOROLOGY 103, 357-374

Page 2, line 20: It might be worth mentioning the FLUXNET network specifically here, and citing Baldocchi et al., 2001 FLUXNET: A new tool to study the temporal and spatial variability of ecosystem-scale carbon dioxide, water vapor, and energy flux densities, BULLETIN OF THE AMERICAN METEOROLOGICAL SOCIETY, 82, 2415-2434

Page 6, line 22: are also collected at all sites?

Page 8, line 26: It is not clear why three different sources of alternative met data are required. Does one provide information the others do not? An opening sentence justifying the need to have different sources of met data would help the reader.

Page 10, line 92: wide spread should be one word

Page 11, Section 3.2 The difference between OzFluxQC and DINGO could be better articulated here. The text only highlights some differences in the plots generated and the format of output (csv vs netCDF) but these differences are only superficial. What are the differences in terms of the internal processing? Do both approaches use the

same algorithms for gap-filling and partitioning, and if not, what are the fundamental differences?

Page 13, Line 10 It appears that the uStar threshold identified can vary seasonally and from year to year. As the uStar threshold can have a large impact on the fluxes (particularly flux partitioning) it would seem important to highlight better whether uStar varied seasonally or not, and at what sites. Have the authors considered using also a fixed uStar threshold? This is also included for comparison in the Fluxnet 2015 data release.

Page 14, line 5: Usually -> often

Page 21, line 10: The optimal window size likely changes depending on the time of year and the site. The authors claim that they have found an optimal size of 60 days seems somewhat ad-hoc. No evidence is presented nor any methodology for determining the optimal window size given. Perhaps rephrase. A more complex ANN design might not be necessary. Simply including day of year as one of the predictors should allow flexibility in the response.

Page 21, line 19: As there are no measurements of ER, you cannot really claim that daytime partitioning methods overestimate ER. The true value is unknown.

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