

Review Form 1.7

Journal Name:	International Journal of Environment and Climate Change
Manuscript Number:	Ms_IJECC_98122
Title of the Manuscript:	Eddy Covariance Measurements of Turbulent Heat Fluxes over a Grass-Covered Surface in a Tropical Location
Type of the Article	Original Research Article

General guideline for Peer Review process:

This journal's peer review policy states that **NO** manuscript should be rejected only on the basis of '**lack of Novelty**', provided the manuscript is scientifically robust and technically sound. To know the complete guideline for Peer Review process, reviewers are requested to visit this link:

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[Review Form 1.7](#)

PART 1: Review Comments

	Reviewer's comment	Author's comment (if agreed with reviewer, correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)
<p>Compulsory REVISION comments</p> <p>1. Is the manuscript important for scientific community? (Please write few sentences on this manuscript)</p> <p>2. Is the title of the article suitable? (If not please suggest an alternative title)</p> <p>3. Is the abstract of the article comprehensive?</p> <p>4. Are subsections and structure of the manuscript appropriate?</p> <p>5. Do you think the manuscript is scientifically correct?</p> <p>6. Are the references sufficient and recent? If you have suggestion of additional references, please mention in the review form.</p> <p><u>(Apart from above mentioned 6 points, reviewers are free to provide additional suggestions/comments)</u></p>	<p>1. The manuscript describes Eddy Covariance measurements of latent and sensible heat from a grassland site in Nigeria. Data from three to four years is presented and monthly and seasonal changes are noted. The description of the site, measurements, and data are generally good. But the introduction and definitions read like an introductory Earth science or meteorology textbook, which might be okay if there was also some deeper statements of why this was being submitted. But there are no questions being addressed in this manuscript, little interpretation of the data or description of why the authors made these measurements or what they hope to learn.</p> <p>2. The title is fine.</p> <p>3. The abstract covers the paper as written.</p> <p>4. Yes</p> <p>5. I think the presentation of data is correct, except for figure 6 though I suspect it's just not described correctly. See detailed comments below. I don't think the interpretation of the Bowen ratio is correct, which is the one calculation that the author performed.</p> <p>6. Yes</p> <p>My major comment on this manuscript is that it doesn't ask or attempt to answer any questions. It's just a presentation of data obtained. In the introduction, tell us why you decided to make these measurements? Why are they important. What are you trying to learn? You mention that models can use them, but are you trying to provide better parametrizations to models? You don't suggest that nor compare your observations to models. Can you compare your measurements to others in similar ecotypes? If so, are they the same or different? Can you compare your measurements to different ecotypes; mixed grass and trees or forested? If so, are there differences and what do you learn from that. You have several years of measurements, do you see variability over the years? Can you link that variability to natural phenomena? You mention you measure CO2 flux as well. Can you correlate that with changes in the latent or sensible heat flux? What does it tell you about the biosphere?</p> <p>You present the data, but you don't discuss what the data tells you, except that when it's sunny it's hotter and when it rains it's wetter. There's no real analysis.</p> <p>Secondary major comment is your interpretation of the Bowen ratio. 91% of the time the ratio is less than 1 doesn't mean that 91% of the heat went to evapotranspiration. As an example, if all the time 51% of energy went to latent heat and 49% went to sensible heat the Bo would always be less than 1., but that would NOT mean that 100% of the heat went to evapotranspiration. That number is given by the actual Bo ratio, not the percent of time the ratio is less than or more than 1.</p>	
<p>Minor REVISION comments</p> <p>Is language/English quality of the article suitable for scholarly communications?</p>	<p>1. Yes</p> <p>Minor Comments:</p> <p>Line 18: Do you mean measuring or understanding land-surface-atmosphere processes are essential for climatic projections? You're missing a verb.</p> <p>Lines 19-22: Do you mean changes/departures in the flux from long term averages indicate climate change.</p> <p>Line 33: <i>and</i> should be <i>to</i> as in "...transfer from the surface to the overlying air"</p>	

Review Form 1.7

	<p>Line 34: I don't know what this sentence is trying to say. What does "It is manifested due to" mean?</p> <p>Introduction: The introduction is very introductory. It amounts to definitions of sensible and latent heat flux. But you should add what can be learned from these measurements. You mention use in models, but this is not a modelling paper. What are you trying to learn from these in situ measurements? Also, add a few sentences telling the reader what this paper is about and what they can expect to find in the rest of the paper.</p> <p>Line 59: between the surface and <i>what</i>? Not the eddy fluxes, maybe you meant to say between the surface and the air or the atmosphere?</p> <p>Line 63: add <i>in a</i> before quasi-continuous.</p> <p>Line 67: Here's an example of you saying your measurements can help you predict something. Does your data do that? If you can use the data, in the discussion show us how to use it to predict climate conditions.</p> <p>Lines 73 to 79 and then 89 to 94: You use words like 'correction methods', 'conditions', 'numerous assumptions', 'appropriate procedures', etc. but you don't actually explain any of these. What conditions or procedures or assumptions are made or are you making?</p> <p>Line 123: The average rainfall should be a single number (optionally with an uncertainty or plus/minus). You can remove the word average and leave it as "The annual rainfall varies between ...". Or write it as you did for temperature.</p> <p>Line 147: Did you actually look at the CO2 data? That seems like it might give you more to look at in this paper.</p> <p>Line 154: You measured 3 or 4 years. Did you see any variability year to year? That might be part of your results/discussion.</p> <p>Line 166: variables should be variable. Not plural.</p> <p>Line 167: define what the ' and bar represent.</p> <p>Line 186: <i>frequently</i> applied? You didn't quality control all the data? I don't think this is what you meant to say.</p> <p>Line 285-286: Are there other possibilities to consider besides solar radiation driving the diurnal cycle or heating. Isn't this almost by definition of diurnal?</p> <p>Figure 6: The x-axis as described doesn't make sense. I think what you are doing is plotting the daily average from figures 3 and 5. But the way this is plotted would suggest that the x-axis is time and so each day of the month should show a diurnal cycle, not one per month. Somehow you need to describe this better. Maybe over each month needs to be a 24 hour time scale?</p> <p>Lines: 350 to 353: see major comments section</p> <p>Line 354: remove <i>as</i>, in "... is as a result ..."</p> <p>Line 355 to 357: I don't understand this sentence. What canopy are you talking about? The grass? Is the grass tall enough to effectively shade the surface?</p> <p>Your statement would seem to depend on whether the water vapor is being directly evaporated from the soil or through transpiration. I might guess based on your statement you think it's the latter. Looking at the CO2 data might tell you, because in order for the leaves (blades of grass) stomata to open to take in CO2, they would also be releasing water vapor, so I would expect some correlation. Though there might be simply a correction based on sunshine.</p> <p>In general this paragraph is not well presented and you make statements not backed up either with your data or with referenced to existing knowledge.</p> <p>Summary and conclusion: This is certainly a summary, but you are not concluding anything.</p> <p>Lines 370 to 376: Again, I think your interpretation of what Bo means is wrong. The first and second half of this paragraph contradict each other.</p>	
<p><u>Optional/General</u> comments</p>		

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PART 2:

	Reviewer's comment	Author's comment <i>(if agreed with reviewer, correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)</i>
Are there ethical issues in this manuscript?	<i>(If yes, Kindly please write down the ethical issues here in details)</i>	

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