

Review Form 3

Journal Name:	International Journal of Environment and Climate Change
Manuscript Number:	Ms_IJECC_127187
Title of the Manuscript:	Relationship between Inter-Tropical Front and Rainy Season Onset in Guinea Republic
Type of the Article	Original Research Article

Review Form 3

PART 1: Review Comments

Compulsory REVISION comments	Reviewer's comment	Author's Feedback <i>(Please correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)</i>
Please write a few sentences regarding the importance of this manuscript for the scientific community. Why do you like (or dislike) this manuscript? A minimum of 3-4 sentences may be required for this part.	In West African countries, the socio-economic sector is rain-fed agriculture driven. The rainfall is a major factor that determines crop choice and yield. In tropical Africa and Atlantic during the West African Monsoon, rainfall come from convective systems with a wide range of proprieties (stormy, squall lines). According to Dione 2013, deep convection in West Africa exhibits important variability by local thunderstorms or smaller convective systems, but also by convective mesoscale systems (squall lines). The planting (sowing) dates, crop growth, yield and food production have been affected by the variability of rainfall onset and duration. Hence the importance of these studies and their practical application by society.	<p>The main objective is to better understand the onset of rainfall on precipitation in the Republic of Guinea, also to study the InterTropical Front (ITF) position compared to each station at the onset date. For it, we link the rainfall Onset and the distance from stations to the ITF location and found that it's at least 57km Northern. We also found a good correlation between ITF position and precipitation at monthly and decadal (10 days) scales for the different stations.</p> <p>Ok done.</p> <p>Thank you very much Dear for your review.</p> <p>Many researchers reported on these processes. (Akpo 2015, Issa Lele and Peter Lamb 2010, Lebel 2009, Lothon 2008; Hall 2006, Yoboue 2005).</p> <p>In West Africa, Intertropical Front (ITF) has annual cycle. In December its position is located Southern at latitudes (5-6) ° North, near Atlantic Ocean and, after, it slowly moves northward to (18°-20°) N and then retreates back. The wet season starts when the position of the Intertropical Front reaches rather high latitudes (Lebel et al., 2010). The seasons in West Africa are schematically determined by the position of the Intertropical Convergence Zone (ITCZ), the surface formed by the convergence of Saharan and oceanic air masses (Akpo et al. 2015, Yoboue et al. 2005).</p> <p>Thank you very much Dear for your review</p> <p>Here are some papers on this field</p> <p>-Issa Lélé M. and Peter J. Lamb, 2010: Variability of InterTropical Front (ITF) and Rainfall over West African Soudano-Sahel. Journal of Climate</p> <p>- Akpo A, Galy-Lacaux C, Laouali D, Gardrat E, Caste´ra P (2015) Five years study of rainwater chemistry and wet deposition in the wet savanna of Djougou, Benin (West Africa). Atmos Environ 115:110–123 A</p> <p>-Lothon M, Said F, Lohou F, Campistron B. 2008. Observation of the</p>

Review Form 3

		<p>diurnal cycle in the low troposphere of West Africa. Mon. Weather Rev. 136: 3477 – 3500.</p> <p>-Hall NMJ, Kiladis GN, Thorncroft CD. 2006. Three-dimensional structure and dynamics of African easterly waves. Part II: Dynamical modes. J. Atmos. Sci. 63 : 2231 – 2245.</p> <p>Lebel, T., Parker, D., Bourles, B., Flamant, C., Marticorena, B., Peugeot, C., Gaye, A., Haywood, J., Mougin, E., Polcher, J., Redelsperger, J-L, and Thorncroft, C. D., 2009. The AMMA field campaigns: Multiscale and multidisciplinary observations in the West African region, Quarterly Journal of the Royal Meteorological Society.</p> <p>Yoboué, V., Galy-Lacaux, C., Lacaux J. P., and Silue S. 2005. Rainwater chemistry and wet deposition over the wet Savanna ecosystem of Lamto (Côte d'Ivoire), J. Atm. Chem., 52, 117-141, .</p> <p>to determine the correlation between the position of the Intertropical Front and the precipitation at the monthly and dekadal scales for the different stations</p>
Is the title of the article suitable? (If not please suggest an alternative title)	The title should be complemented by the relationship between ITF and the onset of the rainy season. For example, "Impact of the ITF relationship and the onset of rainfall on precipitation in the Republic of Guinea"	<p>Title: Thank you very much for this title suggestion. Thank you for your contribution.</p> <p>Ok done</p>
Is the abstract of the article comprehensive? Do you suggest the addition (or deletion) of some points in this section? Please write your suggestions here.	The abstract of the article is understandable; however, it is not structured.	<p>Ok done. Abstract has been revised.</p> <p>We reviewed the paper in general.</p> <p>Thank you for your contribution.</p>
Are subsections and structure of the manuscript appropriate?	The subsections and structure of the manuscript is appropriate	<p>Yes, the subsections and structure of the manuscript are appropriate.</p> <p>Ok done.</p>
Please write a few sentences regarding the scientific correctness of this manuscript. Why do you think that this manuscript is scientifically robust and technically sound? A minimum of 3-4 sentences may be required for this part.	<ol style="list-style-type: none"> 1. The correlation used is a simple correlation. However, the variation in precipitation is multivariate, so it would be necessary to determine what factors influence the absence, presence and change of rainfall start dates. 2. The results show a variability in the onset of storms of almost 3 months between seasons. What I consider to be a very large range of difference for a country the size of Guinea. Perhaps this is due to the different criteria for starting the rainy season 3. Rainfall also varies widely for a territory the size of Guinea from 1700 to 5600 mm per year. 4. The correlation coefficients show a high correlation, however it is not the only causality criterion that should be taken into account. Correlation is not synonymous with causality. 5. The study should be rethought taking into account other variables apart from the IFT that condition precipitation. 	<p>Yes, this manuscript is scientifically robust and technically sound.</p> <p>Water-related problems (drought, flooding) are not only due to the accumulation of rain but also to her spatio-temporal distribution. One of the recurring problems of farmers is failure control of Rainy Season Onset which is of great importance for productivity. In this manuscript, the determination of the rainy season starts was done using a criterion retained for our study zone; also a good correlation between the ITF position and the monthly precipitation was found for each station. This study will allow farmers to know with more precision the rainfall onset in the Republic of Guinea.</p> <p>Ok done.</p>
Are the references sufficient and recent? If you have suggestions of additional references, please mention them in the review form.	Less than 10% of the references cited are less than five years old. It is necessary to do an exhaustive search of the literature and update it to more recent years.	<p>The references have been completed in paper.</p> <p>Ok done.</p>

Review Form 3

<p>=</p>		<p>Gupta N., Mahato P.K., Patel J., Omar P.J. (2002). Chapter 30 - Understanding trend and its variability of rainfall and temperature over Patna (Bihar). <i>Current Directions in Water Scarcity Research</i>. 7, 533-543. https://doi.org/10.1016/B978-0-323-91910-4.00030-3</p> <p>Kumar V., Chaplot V., Omar P. J., Mishra S., H Md. Azamathulla H. Md. (2021). Experimental study on infiltration pattern: opportunities for sustainable management in the Northern region of India. <i>Water Science and Technology</i>, 84: 10-11. https://doi:10.2166/wst.2021.171</p> <p>Umakanth N., Satyanarayana G. C., Naveena N. (2021). Statistical and dynamical based thunderstorm prediction over southeast India. <i>Journal of Earth System Science</i>, 130 : 71.</p> <p><u>Gupta N., Patel J., Gond S., Tripathi R. P., PJ Omar P. J., PKS Dikshit</u>P. K. S. (2022). Projecting future maximum temperature changes in River Ganges Basin using observations and statistical Downscaling Model (SDSM). <i>River Dynamics and Flood hazards, Disaster Resilience and Green Growth</i>, https://doi.org/10.1007/978-981-19-7100-6_31</p> <p>Gupta N., Banerjee A., Gupta S.K. (2021a). Spatio-temporal trend analysis of climatic variables over Jharkhand, India. <i>Earth Syst Environ</i>, 5(1) :71–86</p> <p>Gupta SK, Gupta N, Singh VP (2021b) Variable-sized cluster analysis for 3D pattern characterization of trends in precipitation and change-point detection. <i>J Hydrol Eng</i>, 26(1) : 04020056</p> <p>Omar P. J., Gupta P., Wang Q. (2023). Exploring the rise of AI-based smart water management systems. <i>AQUA—Water Infrastructure, Ecosystems and Society</i>, 2 (11). https://doi.org/10.2166/aqua.2023.005</p> <p>Yoboué V., Galy-Lacaux C., Lacaux JP. (2005). Rainwater chemistry and wet deposition over the Wet Savanna Ecosystem of Lamto (Cote d'Ivoire). <i>Journal of atmospheric chemistry</i>. 52 : 117–141.</p> <p>Lebel T., Parker D., Bourles B., Flamant C., Marticorena B., Peugeot C., Gaye A., Haywood J., Mougín E., Polcher J., Redelsperger J-L and Thorncroft C. D., (2010). The AMMA field campaigns: Multiscale and multidisciplinary observations in the West African region, <i>Quarterly Journal of the Royal Meteorological Society</i>, 136 (S1): 8-33. https://doi.org/10.1002/qj.486</p> <p>LOTHON M., SAÏD F., LOHOU F., AND CAMPISTRON B. (2008). Observation of the Diurnal Cycle in the Low Troposphere of West Africa. <i>Monthly Weather Review</i>, 136: 9. https://doi.org/10.1175/2008MWR2427.1</p> <p>Hall M.C. and Willis J.H. (2006). Divergent selection on flowering time contributes to local adaptation in <i>Mimulus guttatus</i> populations. <i>Evolution</i>, 60(12), 2006, pp. 2466–2477</p>
----------	--	--

Review Form 3

		<p>Akpo A., Galy-Lacaux C., Laouali D., Gardrat E. and Castera P. (2015). Five years study of rainwater chemistry and wet deposition in the wet savanna of Djougou, Benin (West Africa). <i>AtmEnv</i>, 115:110-123. http://dx.doi.org/10.1016/j.atmosenv.2015.04.064</p> <p>Sultan B. and Janicot S. (2003). The West Africa Monsoon Dynamics. Part II: The “Presonset” and “onset” of the Summer Monsoon. <i>Journal of Climate</i>, 16:3407-3427.</p>
<p>Minor REVISION comments</p> <p>Is the language/English quality of the article suitable for scholarly communications?</p>	<p>The English used in the manuscript is suitable for peer-to-peer communication and school communications. Segments of the text in language other than English should be avoided (One paragraph is in French).</p>	<p>Thank you for your contribution. Ok done.</p>
<p>Optional/General comments</p>	<p>1. The correlation used is a simple correlation. However, the variation in precipitation is multivariate, so it would be necessary to determine what factors influence the absence, presence and change of rainfall start dates.</p> <p>2. The results show a variability in the onset of storms of almost 3 months between seasons. What I consider to be a very large range of difference for a country the size of Guinea. Perhaps this is due to the different criteria for starting the rainy season</p> <p>3. Rainfall also varies widely for a territory the size of Guinea from 1700 to 5600 mm per year.</p> <p>4. The correlation coefficients show a high correlation, however it is not the only causality criterion that should be taken into account. Correlation is not synonymous with causality.</p> <p>The study should be rethought taking into account other variables apart from the IFT that condition precipitation.</p>	

PART 2:

	<p>Reviewer’s comment</p>	<p>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>
<p>Are there ethical issues in this manuscript?</p>	<p><i>(If yes, Kindly please write down the ethical issues here in details)</i></p>	<p>No, there are not ethical issues in this manuscript.</p>