

## ***Interactive comment on “The climatic imprint of bimodal distributions in vegetation cover for West Africa” by Z. Yin et al.***

### **Anonymous Referee #4**

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#### General comments

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This manuscript describes an analysis of how climate and vegetation can interact to produce bimodalit–i.e., multiple possible ecosystem states that can exist under a given climate regimes. This is considerably out of my area of expertise, but the ms is well written and generally clear, even for a non-specialist. It’s also interesting, and I appreciate e.g. the spatial distribution of uncertainty is nicely done.

Aside from minor technical questions (see list below), most of which revolve around clarity and concision, I have two more general comments. First, not enough information is given about the software used and data/code availability (see comment #3

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below). For reproducibility this needs to be improved, and ideally all analysis code made available.

Second, the analysis excludes areas with human activities. There needs to be more clarity about exactly how much area this comprised, and some discussion about the implications of doing so. Again, see comments below.

Overall, however, I found this a strong, interesting study that needs only minor to moderate revisions.

#### Specific comments

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1. Page 18214, line 13: “not a sufficient predictor” is somewhat vague
2. P. 18214, l. 16: same with “cannot exclude the probability” – more specificity would help clarify
3. P. 18218, l. 6 and throughout: what version of flexmix? What version of R? What is code and data availability? It’s 2016, and in general I expect all code and data (at least that backing the main results) to be included as supplementary info, or posted in a repository. It’s not acceptable to produce results from a black box
4. P. 18219, l. 6-: what percentage of data were excluded because of human activities?
5. P. 18225, l. 5: “principle effect”? Do you mean “significant effect”?
6. P. 18233, l. 17: “implications”
7. P. 18234, l. 1: “as the only”
8. P. 18235, l. 1-10: need to also discuss uncertainty of human activities! (Which were excluded from this analysis, right?) Whether the Congo stays as forest or not is probably much more likely to depend on people chopping it down versus climate shifts, no?

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9. P. 18235, l. 13-24: this conclusion doesn't add anything new; remove

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Interactive comment on Biogeosciences Discuss., 12, 18213, 2015.

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