Earth System

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Discussions

Interactive comment on "Perceived temperature in the course of climate change: an analysis of global heat index from 1979–2013" *by* D. Lee and T. Brenner

Anonymous Referee #1

General comments: This piece of research provides a detailed justification and description of the methods to build the global heat index and invites the scientific community to use the data. Technically, the method and the results seem solid. However, the paper would benefit from a better structure, some changes in style/language and some clarification on the title that the paper emphasizes the methods and gives only limited "initial" analyis of the data.

Specific comments: section 2.1 and after: Here, the text would benefit from a clearer structure/topic sentences. It justifies (ERA-Interim) reanalyis data (instead of observation data), a model (rather than a simpler interpolation appraoch) and describes the

cumputation. Make sure that the line breaks reflect that each paragraph discusses one of these elements (delete line break in l 10 page 322).

In the following sections this comment applies as well, the text is in parts rather chronologically written. (First we did this, then we did that). For the reader it might be easier when he gets an overview first. See here: http://www.biosciencewriters.com/Using-Topic-Sentences-to-Write-Stronger-Better-Organized-Scientific-Manuscripts.aspx

Authors might what to think about the underlying "research question". Section 3 has elements that would rather fit into the methods section, elements for discussion (what are weaknesses) is included in the results section. This makes obvious, that in fact the result is a dataset and an example of how to use it. Here, it is for sure a methodological question such as "is it possible to build a dataset that describes the change of percieved temperature?" Some of the statements (obervation data are sparse, high quality data is rare, reanalyis has problems, could be moved into a newly created "discussion" section and thus the methods section would be rather a "recepie" (here is what we did).

Technical corrections: p 318, l 8: and other animals (delete "other"- I have sympathy for the underlying statement that humans are animals as well, but it might be confusing for some readers) p 318, l 21: explain "heat index climate groups" p 319, l2: "climate gases" is inaccurate, use approprate wording p 319, l 4-5: last senctence is not necessary here; it is a judgement p 319, l17: with higher frequency (add: "and intensity") p 319, last paragraph: here language can be improved and condensed: consider to write "Many studies have analyzed the effects....." and "They show that changes in the earth's thermal energy houshold affect both the flow of tatent and sensible heat and are thus the most directly relevant for human physiology." "rids" is a word that I do not know (getting rid of??) Further, this paragraph is about the role of humidity and gives the examples of other metrics. This can be made more clear to the reader by listing them. "For this reason, most metrics measuring heat exposure take both temperature and humidity into account. For example WBGT and apparent temperature. "

delete the line break on p 320, l5 I think, there is a longer history of using apparent temperature. Since the heat index presented here is based on apparent temperature, some more references (Klimamichel Jendritzky 1990) could be mentioned. The relation/difference between heat index and apparent temperature is not yet fully clear to me.

p 312, l1: more rare (not "rarer") p 320, l13-22: here rather high expectations are raised and the reader is a bit disappointed when he finds out that the analyis of the data is rather limited. Consider deleting the sentence "The data are analyzed...."

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C77