

Interactive comment on “The historic reality of the cyclonic variability in French Antilles, 1635–2007” by E. Garnier et al.

Anonymous Referee #2

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General Comments Unfortunately, I am having trouble finding a consistent and cogent theme to this paper. It is really not clear to me what the authors have found and what their actual conclusions are. The paper focuses on a relatively small area of the North Atlantic in the French Antilles and then takes that data and makes a fairly large jump in making conclusions related to the entire basin. In the abstract they indicate that the idea of an increase in hurricanes in the 20th Century since the 1950s is somehow tempered by an “intensive cyclonic period in past centuries”. From what I can see in Tables A1 and 2 this intensive period is based upon the existence of a total of 58 storms over a 372 year period from 1635-2007 that are not either in the Caviedes or Chenoweth datasets (or an extra 0.16 storms per year).

While the Knapp et al (2010) paper is noted in the list of references, nowhere in the

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paper is it referenced, and this is a key and missing critical piece of information as the International Best Tracks Archive for Climate Stewardship (IBTrACS) is the global standard for tropical cyclones in the North Atlantic from 1851 to the present. In Table A1, there are a total of about 30 storms noted from 1851-2007 that are supposedly new because they are not in either the Caviedes or Chenoweth datasets, yet there is no comparison to the IBTrACS dataset. Therefore, to take such a relatively small number of supposedly extra storms in the French Antilles area of the North Atlantic from 1656-2007 and then extrapolates that to having a tempering effect on the activity of hurricanes in the period after the 1950s is more than a stretch.

I find the beginning of section 2.2 on page 1523 to be unsubstantiated. When the authors state that “The majority of studies dedicated to the Caribbean basin ignore the French Antilles for purely political and linguistic reasons”, this is a very serious and again unsubstantiated charged weakly based on some supposed neglect “for linguistic reasons and because of the geographical distance from documentation.” The authors then go on to further justify this by indicating a bias towards the Greater Antilles – an area where Haiti (a French-speaking nation) is located. The section further goes on to talk about a wide neglect of the Lesser Antilles for climate research while really failing to provide much solid evidence of this.

Section 3.2 beginning of page 1526 is entitled Method of Reconstruction, yet frankly, there is very little noted about how the authors did the kind of reconstruction necessary to result in Table 2 and Figures 2-4. They show some very specific figures related to the exact Saffir-Simpson categories of storms from 1639 to the present. I believe that much more detail needs to be provided on these as the specificity of the results, while based on documentation they found in some archives, is not well documented in this paper.

In the Conclusions section, again, some considerable characterization of tropical cyclone activity across the entire North Atlantic basin is made based upon data in the French Antilles, a relatively small area of the overall basin, and frankly not the most ac-

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tive part of the basin. The authors talk about a strong slowdown in activity after 1979, while ignoring an extremely active period from 1995-2012. Earlier in section for the authors to state that they do not see a stronger more active period after 1995 based on data in the French Antilles is preposterous. The papers from Goldenberg et al 2001 and Landsea et al 1998 were very detailed statistically based studies that have been cited on numerous occasions and have met the test of time in the literature.

In conclusion, I find little to no real statistical methodology in this paper that justifies the conclusions made. This paper needs some real work to bring it up to the standard for a scientifically-based climate study of tropical cyclones in French Antilles. The addition of data that the authors found to the existing archives (e.g., IBTrACS) could be a real positive addition to the literature. However, in its present form I find this paper unsuitable for publication. The paper is loaded with speculation, conjecture, and opinion, and fails to meet the test for a scientifically based paper that takes a statistical approach to the study.

Specific Comments From a specific technical standpoint, there are numerous issues and problems with the paper that involve grammar, etc. Frankly, given my rating of this paper as not being appropriate for publication in its present form, I am not going to take the time to note all of these, but will note a few; should the paper be re-submitted for future consideration, I would note these in a more systematic manner.

- page 1520: The IPCC is the Intergovernmental Panel on Climate Change - page 1521: Think the authors meant Southeast United States; the last hurricane to make landfall in the Southwest U.S. occurred in 1859 in San Diego - page 1527: The top level of the Saffir-Simpson scale is 252 km h⁻¹ and so the author's reference to storms at 345 km h⁻¹ as something proposed in 1961 (prior to the development of the Saffir-Simpson scale is simply confusing. Also Robert Simpson was the director of the National Hurricane Center

While I find the prospect of additional tropical cyclone data from this area of the basin

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to be a good thing, in order to truly be of use, the community would need to also have some idea of the tracks of any new storms for this to be truly useful. At this point, numbers of storms and a better characterization of the intensity of these storms would be a good thing on their own, but again, I frankly find this paper to add little to additional information from a long-term climate standpoint to have much utility for climate studies.

I do not like being so harsh, but the paper reads more like a narrative of what the authors have found in archives in various French archives, and while very interesting, it is not presently of a quality to be a part of the climate science literature related to tropical cyclone studies.

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