Natural Hazards
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Discussions

Interactive comment on "Characterization and effects of cold fronts in the Colombian Caribbean Coast and their relationship to extreme wave events" *by* J. C. Ortiz-Royero et al.

J. C. Ortiz-Royero et al.

jortiz@uninorte.edu.co

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Dear Rewiever:

I really appreciate your suggestion during the discussion process.

Please, the follow changes must be included on the text:

1. Page3660 Line10: "The highest occurrences ...". Either explain occurrences of what, or maybe re-word to something like "The highest numbers of cold fronts

R/ I'm agree, please change on the page 2, line 10 of manuscript, the sentences: The

highest occurrences. . .

To: The highest number of cold fronts occurrences. . .

2. Page3660 Line12: "... trend ...". The word trend occurs several times in the paper, and the associated comments may be inconsistent with each other. Compare this use of trend (... not observed ...) with those at Page3667 Line9 (... is an observable ...) and Page3669 Line22 (This trend indicates ...).

R/ I'm agree. Please change on the page 5, line 25 of manuscripts, the sentences: As shown in Fig. 5, the movements of the Inter-tropical Convergence Zone or ZCIT in Spanish, correspond to three main seasons: a dry period with strong winds (December–April), a transitional period (May–July), and a rainy period (August–November).

To: As shown in Fig. 5, the movements of the Inter-Tropical Convergence Zone (ITCZ), produces three main seasons in Colombia: a dry period with strong winds (December–April), a transitional period (May–July), and a rainy period (August–November), (Andrade and Barton, 2001).

3. Page3664 Line12. The quoted temperature and humidity values do not correspond with Fig. 6

R/ I'm agree. Please change on the page 6, line 12 of manuscripts, the sentences The mean temperature in the area, obtained as a multiyear average for data from airport meteorological stations, is approximately 28.5 oC, and the relative humidity of the study area is approximately 73.6 % (Fig. 6).

To: The mean temperature in the area, obtained as a multiyear average for data from airport meteorological stations, is approximately 27.6 oC, and the relative humidity of the study area is approximately 82.4 % (Fig. 6).

4. Page3664 Line22: "The phenomena ... also reported". This needs some extra words to form a sentence.

R/ I'm agree. Please change on the page 6, line 22 of manuscripts, the sentences: were classified. The phenomena associated with the passage of cold fronts through the Caribbean Sea, verifying that increases in wave heights in this region were also reported.

To: were classified. The phenomena associated with the passage of cold fronts through the Caribbean Sea and their relationship with the extreme wave heights in this region, were also reported.

5. Page3668 Line3. Re-word to something like "meters, corresponding to the average of the highest one third of the waves) ...".

R/ I'm agree. Please change on the page 10, line 2 of manuscripts, the sentences: The Hs time series (Hs is called the significant wave height in meters and correspond..

To: The Hs time series (Hs is called the significant wave height (m), and correspond...

6. Page3668 Line5. Please say that the values in Figures 11 and 12 are monthly averaged significant wave heights (if that is what they are, as opposed to, for example, monthly maxima).

R/ I'm agree. Please change on the page 10, line 5 of manuscripts, the sentences: Figures 11 and 12 show the seasonal and annual variation, respectively...

To: Figures 11 and 12 show the monthly and multiyear averaged significant wave heights, respectively...

7. Page3670, final paragraph of Section 4 (or maybe elsewhere). I repeat part of my previous comment about Figure 15 being difficult to interpret. I suggest use of a more intuitive colour scale (I think at present white indicates high values), some text explaining what the different colours mean, and reference to particular features of the plot prompting the conclusions drawn from it.

R/ I'm agree. Please change on the page 10, line 22 of manuscripts: a time series,

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thereby identifying the intermittence of each of the processes at a specific temporal scale. The wavelet analysis shows that processes...

To: a time series, thereby identifying the intermittence of each of the processes at a specific temporal scale (Fig. 15). White and lighter colors in the wavelet spectra correspond to high values of the transform coefficients (power). The thick black contour delimits the 95% confidence level against AR (1) red noise and the cone of influence where edge effects ($T/2\sqrt{2}$) are not negligible is shown as a black thin line (Fig. 15). The wavelet analysis shows that processes...

Best regards,

Ortiz J.C et al