

Interactive comment on “Environmental controls on surf zone injuries on high-energy beaches” by Bruno Castelle et al.

Anonymous Referee #2

Received and published: 18 June 2019

This manuscript investigates the environmental control of surf zone injuries (SIZ) along the coast of SW France. To analyze SIZ related to shore breaks and rips it builds upon the data set (summers 2007, 2009, and 2015) presented by Castelle et al. 2018a (Natural Hazards). I believed the work present a contribution to the understanding of SIZ which has a high social impact. Thus, the work is suitable for the NHESS journal. However, I think that the manuscript requires additional analysis and improvement of the presentation quality before publication. My general and specific comments are provided below:

General comments Exposure.- The results seems to be strongly correlated with exposure (as the authors pointed out) which explains the peaks in the SIZ during early August (when most of the people in France are in vacations) and holydays (weekend

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of July 14th). Therefore, I think that the environmental factors would be more clearly observed by normalizing the data set by a factor accounting for the number of beach users. I know that analyzing the images from the videocameras might be out of the scope of this work but I guess some statistics about the occupation in coastal cities might be available or testing an existing algorithm is worth to explore. This is something that at least should be more explicitly addressed in the revise ms.

Parameterization.- Wave breaking types can be characterized by parameter relating the wave and beach conditions (e.g., surf similarity, Hunt's). I would expect that the authors explore this and other parameters to be able to extend the current results to other sites. Please check if some of the scatter can be decreased for the shore break analysis.

Additional comments

Page 1, Lines 23, 26, 29, and elsewhere- The word “disproportionately” is employed three times in the abstract and many times in throughout the text. Please find a synonymous to avoid repeating that word too much.

Page 2, Line 13.- It is redundant in this phrase using “annualy” and “each year”. Please re-phrase.

Page 4, Line 25.- Fix the text of section 2 (i.e., replace “Introduction” by “Study Area”)

Page 5, Line 10.- Fix the numbering of the Figure (i.e. replace “Erreur” by “1”).

Page 6, Line 24.- Replace “surf zone Injuries” by “Surf Zone Injuries” Page 6, Line 26.- Replace “Introduction” by “Methods”

Page 7, Line 1.- Replace “Data” by “SZI data”

Page 11-12.- Avoid starting each paragraph with “Fig. . .”

Page 13, line 19-20.- What is the importance of being a Sunday after the national holyday? It looks that could explain such statistics. See my general comment on the

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exposure.

Figure 8.- This video system could give a good proxy of beach users by analyzing the images [e.g., Guillen et al., 2008 JCR]. Explore how easy is to employ an algorithm to obtain a time series of the exposure at this site.

Discussion section. - I believe that the role of exposure and parameters that integrate waves and morphology (e.g., surf similarity, Hunt's parameter, etc) must be addressed in this section. Furthermore, the authors should provide recommendation of what additional information should be capture in the forms in the future to provide more insight on the results.

Figure 17.- I would like to see this in terms of parameters instead independent variables (at least for the shore breaks).

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