

# ***Interactive comment on* “Update of the tsunami catalogue of New Caledonia using a decision table based on seismic data and maregraphic records” by J. Roger et al.**

## **Anonymous Referee #1**

Received and published: 21 March 2019

Review of Roger et al 2019 manuscript (<https://doi.org/10.5194/nhess-2019-36>) The paper describes an interesting attempt to upgrade regional tsunami catalog based on some systematic approach. This approach is to formulate some quantitative criteria for the search of potential tsunamigenic events in the centennial USGS earthquake catalog that could affect the New Caledonia coast and then search for confirmation of tsunami observations on the New Caledonia coast in the available mareograph data and witness reports. So far, most of regional and national tsunami catalogs are updated on some other approach that starts from reported observation of unusual seas level oscillations at some point of the coast under consideration and/or the search local run-up or tide-gage data for already known tsunamigenic event affected other territories.

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Application of this approach turned out to be rather productive and resulted in 25 new tsunami events that were recorded in New Caledonia during the last 10 years (from 2009 to 2019), that were added to 12 events previously known for this territory for the whole historical period (since 1875). Thus, this approach allowed more than double the total number of historical tsunamis observed in New Caledonia.

I think that the manuscript can be accepted as it is after some minor corrections (mostly technical) that are listed below.

Page 1 Line 34 Reference for Pelletier and Louat, 1989 is absent in the References List  
Page 1 Line 34 Reference for Bevis et 1995 is absent in the References List  
Page 1 Line 34 Reference for Pelletier et 35 al., 1998 is absent in the References List  
Page 1 Line 35 Reference for Calmant et al., 2003 is absent in the References List  
Page 2 Line 48 Reference for Soloviev and Go (1974) should be given as Soloviev and Go (1984)  
Page 3 Line 78 Reference for Rabinovich and Thomson, 2004 should be given as Rabinovich and Thomson, 2007  
Page 4 Line 126 Reference for Aucan et al., 2017 is absent in the References List  
Page 4 Line 130 Reference for Aucan et al., 2017 is absent in the References List  
Page 4 Line 136 Reference for Aucan et al., 2018 is absent in the References List  
Page 8 Line 275 Reference for Herbitz et al. (2014) is absent in the References List  
Page 12. Figure 2 displays focal depth/magnitude chart for 744 tsunamigenic earthquakes around the World from 365AD to 2018. However, both parameters can be determined only for the instrumental period (that is since 1900 and with more or less reliable accuracy since 1964). For pre-instrumental period both parameters are usually the result of an expert judgment. I would suggest to re-plot this graph using only the events for the instrumental period.

Page 13 In Figure 4 meaning "P" is unclear. If it is the focal depth, it should be marked as "F" as in the text on page 4 line 116. Page 21. In the Table 2 in the column "Distance to NC center" distance is given with an accuracy down to cm that is meaningless. It should be rounded to km. Page 22. In the Table 3 in the column "Distance to NC center" distance is given with an accuracy down to mm that is

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meaningless. It should be rounded to km.

Please also note the supplement to this comment:

<https://www.nat-hazards-earth-syst-sci-discuss.net/nhess-2019-36/nhess-2019-36-RC1-supplement.pdf>

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Interactive comment on Nat. Hazards Earth Syst. Sci. Discuss., <https://doi.org/10.5194/nhess-2019-36>, 2019.

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