

## Replies to comments on “a bibliometric study of earthquake research: 1900–2010”

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Our analysis—as many other bibliometric studies—focused on aggregated and overall patterns in scientific development. It is our belief that, as long as the bibliometric samples are selected in a rational, representative, and consistent manner, the exact number of articles in a sample is not a significant concern.

The 84,051 papers reported in the article included (1) 81,409 papers indexed in 1900–2010 and (2) 2,642 papers then indexed in the early months of 2011, when the data collection was performed in April and May of 2011. These 2,642 papers were aggregated in the section *Document types and languages of the article*, but not elsewhere. Nevertheless, (1) our analyses, conjectures, and conclusions remain intact, as other parts of the paper are based on yearly data (focusing on papers published prior to 2011); and (2) the relative distribution of article types and languages in different categories will not be affected, even if we separate these 2,642 papers in the analysis.<sup>1</sup>

The consistency of our searching strategy was confirmed by four independent checks. With our reported searching strategy, we located 81,845, 81,397, 82,020, and 80,667 publications for the period of 1900–2010 in searches performed in four university libraries in Canada, the US, and the UK (Fig. 1) during October 26–27, 2012. All four results (81,845, 81,397, 82,020, and 80,667) are close to the original number of 81,409 stated in the article (accessed in May 2011; with less than 0.9 % differences), and the differences

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<sup>1</sup> The original dataset is available from the authors on request.

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This paper is submitted under the Editor’s request, as a reply to a comment on our previous paper “a bibliometric study of earthquake research: 1900–2010”.

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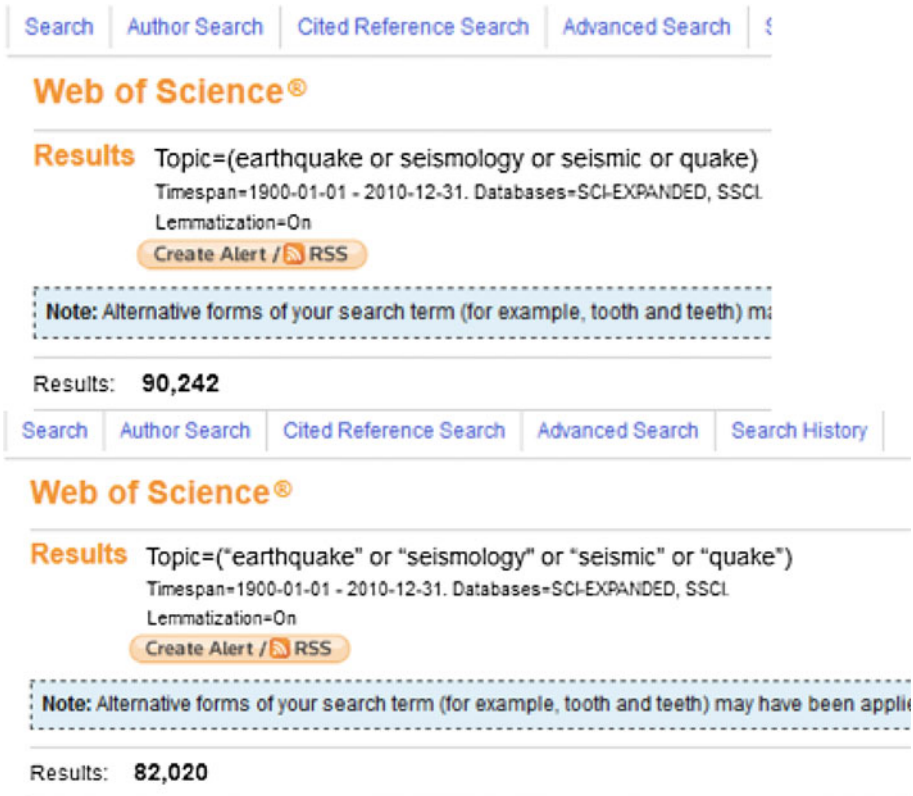
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The figure displays three sequential screenshots of the Thomson Reuters Web of Knowledge search interface. Each screenshot shows a search query: `Topic=("earthquake" or "seismology" or "seismic" or "quake") AND Year Published=(1900-2010)`. The search parameters include `Timespan=All Years`, `Databases=SCI-EXPANDED, SSCI`, and `Lemmatization=On`. The results are sorted by `Publication Date -- newest to oldest`. The first screenshot shows 81,845 results. The second screenshot shows 81,397 results. The third screenshot shows 82,000 results. A summary bar at the bottom of the third screenshot indicates **Results: 80,677 Refine**. The interface includes navigation links like 'Sign In', 'Marked List (0)', 'My EndNote Web', 'My ResearcherID', 'My Citation Alerts', 'My Saved Searches', 'Log Out', and 'Help'. It also features tabs for 'All Databases', 'Select a Database', 'Web of Science', and 'Additional Resources', along with search options like 'Search', 'Author Search', 'Cited Reference Search', 'Advanced Search', and 'Search History'.

**Fig. 1** Five independent checks with our reported searching strategy on the same day from five university libraries in Canada, UK and US



**Fig. 2** A comparison of different implementations of the report search strategy

between these numbers are due to the fact that SCI/SSCI databases are continuously updated with minor changes over time.

The differences between the number of articles reported by the authors and Professor Ho are probably due to different implementations of the searching strategy (Fig. 2). The selection of keywords was informed by the authors’ geological backgrounds. To ensure the robustness of search results, we purposely enforced a tighter condition by including quotation marks. From a statistical sampling perspective, even if we deemed the publications resulted from a relaxed search (as reported by Professor Ho) as the true *population* and the publications resulted from the tightened search (as reported by us) as the *sample*, our analysis would be robust with a sampling rate greater than 90 %. In addition, either using the tighter or relaxed searching strategy, the resulting sample sizes are significantly larger than those used in previous studies on similar topics (for example, Chiu and Ho 2007; Li et al. 2009; Taskin 2010).

We agree that data in 1990–2010 are more reliable, as for example, we have restricted our growth analysis to this period. However, our conjecture focused the propelling effect of major earthquakes, i.e., whether earthquake-related studies are stimulated by major earthquakes, but not on the specific number of papers related to the Loma Prieta earthquake or any other earthquake. Similar observations were made by other researchers (Li et al. 2009; Taskin 2010). In addition to the Loma Prieta earthquake, we have listed other

examples to support our conjecture, such as the Indian Ocean Earthquake in 2004 and the Haiti Earthquake in 2010.

Professor Ho was not directly involved in the preparation of this article in any way. We acknowledged Professor Ho for his pioneering contribution to the general field of bibliometrics, i.e., the excel-based bibliometrics that he developed. Please note that Professor Ho's publication on a similar topic was properly cited in the article (Chiu and Ho 2007).

## References

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