

## ***Interactive comment on “Rain research with disdrometers: a bibliometric review” by M. Fernandez-Raga et al.***

**M. Fernandez-Raga et al.**

roberto.fraile@unileon.es

Received and published: 23 December 2011

Firstly, the authors would like to thank the editors and the reviewers for their comments and suggestions. We can see that they have devoted a lot of time and effort to review this article.

Second, we very much appreciate the positive comments on our study, which will not be mentioned here any further. As for the criticism on the part of the reviewers, we have seen that some of the suggestions are similar and are repeated from different perspectives, so we have decided to group them into key ideas (summarized in headings) and we have then written common answers.

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At the bottom we have listed the comments and suggestions that were not repeated, with the heading: Other individual comments.

After each heading, we have listed the texts from the reviewers. Below, the responses include the improvements we propose, based on the suggestions by the reviewers.

### **NOT A SCIENTIFIC BUT A BIBLIOMETRIC PAPER**

- This paper clearly belongs to a bibliometrics journal rather than to AMT. - A search on the authors and journal frequencies cannot be considered as a scientific paper. - There is no scientific contribution presented in this manuscript. - I would rather prefer to see a real review on distrometers in which various techniques are contrasted and compared - Resubmit to a bibliometrics journal

The authors consider that the content of the paper is clearly a scientific study. It does include bibliometric analyses (such as journal frequencies), but it also analyzes the contents of the articles published, something which is not present in bibliometric studies. The paper does not deal with the content of the papers analyzed, but rather presents the evolution and trends of these contents and the research lines followed. Therefore, the aim is very different from a mere state-of-the-art paper or a review comparing techniques, which would also be something very interesting, by the way. The aim was to present a review of the articles published, but from the point of view of the fact of publication itself. As for the suggestion of submitting the paper to a bibliometrics journal, the authors deem this is not possible because the data have already been published in AMTD. Any attempt to publish the paper in a different journal (even a version improved with the suggestions of the reviewers) would be considered plagiarism.

### **THE PAPER NEEDS TO BE UPDATED**

- The paper neglects recent developments in the field. - I'd recommend make the necessary adjustments in terms of acknowledging recent developments. - It is also missing to make reference of advances that have been done like the 2D video disdrometer. -

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Some types of disdrometers are not included: in particular, I think of the videodisdrometer or 2DVD, acoustic disdrometer and underwater acoustic disdrometer. - Pludix has not been mentioned with POSS, the Sheppard instrument. - Some important references are missing. - There are only 36 references in total, which is a bit limited for a literature review / bibliometric study. - Many references are not mentioned in the text.

In the final version, if the editor accepts our modifications, we propose to extend the study to a recent date, so as to include the most recent studies. In particular, we consider that the introduction, which in the manuscript was just a foreword to the bibliometric study, should gain importance, following the suggestion of the reviewers. It will therefore be more exhaustive and it will include the more recent devices (such as Pludix, 2-DVD, acoustic disdrometer and underwater AD), as suggested by the reviewers. As for the number of references in the final list, it is not our aim to mention all the important studies on disdrometers. In a first stage, the purpose was to analyze the most widely cited articles out of the 381 found. However, this idea was rejected because the number of citations depends on the time since the publication. In the longer version new references will be added to the studies mentioned in the text, and, more precisely, the references suggested by the reviewers, together with many others which must now be included in this new perspective.

#### THE PAPER IS NOT USEFUL FOR FUTURE STUDIES

- It does not present the research and advances that have been achieved until now in this subject, nor describes possible future directions of development. - I think that MW scattering by falling hydrometeors by CW low power radar will be in the future extremely valuable tool to detect hydrometeor characteristics, once further research is carried on specific details - The conclusions, hardly relevant in terms of serving as a guide for future studies

The manuscript describes the contents of the articles published and the trends observed in the publications on disdrometers, but the reader is free to think of possible

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future research lines. However, the authors consider it a good idea to follow the advice by the reviewers, so we suggest expanding section 3.5 (Evolution of the use of disdrometers) to put forward possible directions in future research, including the specific suggestions made by some of the reviewers. Thus, the paper becomes much more useful, attractive and interesting for the scientific community.

#### TABLE 1

- Table 1 is not clear: what are "K L R..."? In addition, there is no reference to Table 1 in the text. - Table 1 is not referred to in the text - Table 1: Please indicate in the legend of the table the signification of K L R N P Q F (first row). And I suppose "A...AF" are journal identifiers. Please clarify.

We will correct the mistake and mention Table 1 in the text. The journal identifiers in the first column will be replaced by the acronyms of the journal, which are much more straightforward. The acronym will also be used in the headings of the remaining columns. Finally, the caption will explain more clearly the meaning of the numbers in the table: in what journal the article was published and what journals have cited it.

#### OTHER INDIVIDUAL COMMENTS

- The choice of WOS is acknowledged to be motivated by the easiness of use.

Several bibliographic databases were used as a starting point of the paper. However, as the number of sources and publications was growing, we realized that the type of material we were encountering included not only articles in journals, but also conference proceedings, official documents, doctoral theses and even unpublished papers. The aim of the study was not to analyze everything written on disdrometers, so we decided to restrict the search to one important database which does not depend on any of the well-known groups publishing scientific journals. The searching techniques we intended to use were already implemented in the WOS application. The last two sentences will be added to the final version of the manuscript.

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- The authors do not provide any explanations about what this study could be useful to. What are the scientific domains/questions which could benefit from such a literature study.

We agree with the reviewer: the manuscript does not mention the usefulness of the study. The scientific community may understand a review article as a break in research activities to go over what has been achieved until now, to look back, ... and to look ahead too! This task of overlooking a particular field of science needs no justification when it comes to analyzing one particular technique, a method or a research object (what is researched and how to research). We can even understand the usefulness of a review on scientific policy (in relation to the social impact of the research) or on the funding provided for research (even though these topics are not purely scientific), and occasionally we find studies of this type in high-impact scientific journals. However, it is sometimes more difficult to assimilate that the process of disseminating scientific knowledge is as important as the actual research. A scientist whose main task is to research and disseminate the results of the research must know how to use and value all the tools available for this purpose: data-gathering equipment, computers to process the data, and even the language he or she uses to communicate the results. In this last stage we should not lose sight of the how and where the results are disseminated. The final version of the manuscript includes a global vision about disdrometry: not only the technical and scientific upshots, but also the editorial process and the publication features.

- Stating that Bringi's career (see p.6049, l.23) "was based on comparing data from the disdrometer with different types of radar, and even with other instruments and satellite data" indicates a serious lack of knowledge of his work. In addition, Bringi is still alive and not retired, so the past tense is not appropriate.

We apologize for this inappropriate sentence.

- Fig. 2: Is it necessary to give all the years in the axis of abscisae? Maybe considering

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the years 1980 - 1985 - 1990 etc. would be sufficient.

It will be changed as suggested.

- Fig. 3: The final number "0.0055169" is not easy to read due to the black solid curve.

In the final version, the number will be placed over the line.

- Fig. 5: Please separate "New Zealand 1974" and the other 4 from the bars.

It will be changed as suggested.

- Figure 6: I do not think that IEEE is an author

We agree with you. It was the direct outcome from the WOS. It will be changed in the final version (the sector will be included in the rest sector)

- Fig. 7: Same comment as Fig. 2. It is not necessary to give all the years in the graph.

It will be changed as suggested.

- Fig. 8: Too small. Please write bigger.

The text will be bigger and the legend is now included in the area of the graph.

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Interactive comment on Atmos. Meas. Tech. Discuss., 4, 6041, 2011.

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