

Response to referee comments

[The R package 'eseis' – a software toolbox for environmental seismology]
June 12, 2018

I would like to thank the referee for the second round of comments. I agree with all of them and have implemented the requested changes as suggested.

Referee 2.1: *Overall this new version of the paper has been greatly improved. I thank the author for the clear answers to my first comments and for the substantial modifications in the manuscript. All the technical points I raises have been answered and well clarified in the text, especially regarding the main limitations and potential evolutions of the “eseis” package. My only remaining concern is still related to part 1 and 2. I am still uncomfortable with the way the R language and the “eseis” package are introduced. To my opinion, the author is emphasizing too much the need for a common language and seems to consider that R is the only appropriate common language (“it is essential to find a common language”, “This common language should be”, “R can serve as the language”, ...). Why not considering the R language as one of the suitable language (as is Python) in the geosciences domain? Why such a long emphasis about a common language? One can also consider that the emphasis should rather be on common data format, reproductivity, code versioning, ... but not the language for the scripting of the codes.*

Reply: I changed the introduction in several sections. Specifically, the following sentences were changed:

“Furthermore, since environmental seismology integrates several neighbouring and more distant scientific fields, to which the seismological results are passed as input data, it is essential to find a common language among these scientific fields, a language that is not necessarily driven by a seismic background. This common language constraint applies to both, the scientific jargon and the data analysis software language.” has been removed.

“While the language Python is widely used in seismological research, and partly also in disciplines like remote sensing, terrain analysis and climatology, there is another software language tailored to data science that also fulfils all these qualifiers: the free statistic software R (RCoreTeam, 2015).” has been replaced by “The free statistic software R is one example of a software that fulfills these qualifiers. ”

“Thus, R can serve as the language for integrating disciplines and providing these disciplines with methods to utilise seismic data, hence allowing research with one software environment rather than passing data and intermediate results from one isolated software to the next.” has been removed.

“Ideally, this common language” has been replaced by “Ideally, a software used for processing data with a broad context of application”

Referee 2.2: *Also, there is a little bit of a contradiction when the author argues in the introduction for a common language across various disciplines (including seismology), namely targeting the R language, and later states (p6 - 13; p24 - 11, p24 - 116, ...) that other analysis tools used in seismology (SAC, Obspy), written in other languages, are more adapted for a wide variety of tasks than “eseis” and should therefore also be used (I fully agree with that). This is rather incoherent with the statement that the community (or “communities”) should go toward a common language. Or, does the author want to express the opinion that in the future we should give up with these existing and quite performant tools and convert them into R codes?*

Reply: Correctly identified contradiction. I think the changes documented for point 2.1 should have resolved this issue. And also right, I do not imply we all should switch from tools well established in given communities to another software/language.

Referee 2.3: *Therefore, I still suggest being less “ambitious“ in the introduction and to focus more on the main objective of this contribution which is to present the “eseis” package. I would advise to present, in a much shorter way, why “eseis” has been written in R (giving some of the pertinent arguments about the advantages of the R language) and put much less emphasis on the need for a common language.*

Reply: I think this also relates to the requested changes demanded in point 2.1. Significant shortening and generalisation has been implemented.

Referee 2.4: *The discussion about the potential need for a common language, and the fact that R might be THE one (although I personally consider that Python can also be but I am perhaps “too much” a seismologist) is of great interest but should be expressed by the author in another dedicated “opinion paper”.*

Reply: Perhaps the text of the previous versions was too misleading. My intention was not to render all other (open) software unsuitable for environmental seismology. So perhaps an opinion paper might pick up some of these ideas, but should not revolve around “R is the only language”. Anyhow, I am grateful for the idea and will think about it.

Referee 2.5: *P2 19 : “R [...] is yet exponentially growing in terms of users and provided packages ...” Please check that the number of users is indeed growing exponentially. The few curves I found on the web rather show a linear trend during the past about 10 years.*

Reply: Indeed, information about such trends is hard to find. My statement was based on a talk during the UseR conference in Brussels last year (<https://www.user2017.brussels/schedule>), focusing on such statistics. However, I agree that internet searchers for such plots yields limited results. Thus, I rephrased the sentence, replacing “exponentially” by “continuously”.