

Reply to reviewer concerning submission  
APAC\_2018\_311 'Road traffic sound level  
estimation from realistic urban sound mixtures  
by Non-negative Matrix Factorization' in Applied  
Acoustics.

July 31, 2018

As a preamble, we would like to thank the editor and the reviewer for the comments and suggestions. Following these comments, we made several changes to the article, which are summarized here. The next sections list our answers to the reviewers comments, with references to the revised manuscript (page, column, and paragraph) where appropriate.

## 1 Answers to Reviewer 1

An interesting approach to estimate the sound level of road traffic in an urban sound environment composed of a mixture of sound sources is presented in the reviewed paper.

The work is well planned and structured. It has an adequate length and the results are interesting.

I only have some minor indications that I think they can improve a little bit this paper.

1. The use of the letter beta should be clarified because its use in expressions (5, 8a, 8b and 8c) and in lines 104-105, seems not to be the same that its use in expressions (4a, 4b y 4c) or, for example, in tables 3 and 4.  
→ Done, The  $\beta$  value is the same, the choice of the  $\beta$ -divergence in the equation 4 influes the way the expressions 5 and 8 are then updated. This has been precised . 'Thus, the choice of the  $\beta$ -divergence in the equation affects how the matrix  $\mathbf{H}$  is updated.' (section 2.1).
2. In relation with table 4, it may be appropriate that it includes some more complete representation or table of results, for the reader interested in analyzing in more detail the effects that the different variables analyzed

may have on errors. For example, one in which, varying one of the variables analyzed, the others remain constant.

→ We add a part dedicated to this where the influence of the number of element on  $\mathbf{W}$  and the temporal window  $w_t$  influence the NMF behavior.

3. References: The bibliographic revision is good, but maybe, some references can be improved.

For example, reference (3), because it is a congress, not a peer reviewed paper. Only as an example, you can consider the references: <https://doi.org/10.1016/j.apacoust.2010.0> and <https://doi.org/10.1016/j.scitotenv.2011.10.018>.

In line 67, it is indicated that Many works but only two references are included. Author may consider others, for example: <http://dx.doi.org/10.1016/j.apacoust.2016.05.020> and <https://doi.org/10.2478/v10168-012-0054-z>

At the end of the lines 30-31, it is possible that some general references are needed. For example, <https://doi.org/10.3813/AAA.918456> and <http://dx.doi.org/10.1016/j.apacoust.2016.04.018>.

→ Done, some references have been add to the different locations indicated.

4. Moreover, there are references that just have been submitted to publication.

→ Done for one reference, the other is still in revision.