

Peer Review Form for Scientific Articles AE2223-I

Fill in this form by typing, not by handwriting. Adjust space to need. The criteria correspond to those mentioned more elaborately on the checklist scientific articles, to be found on Blackboard. Use that checklist for a more elaborate description of the criteria.

Elements
1. Abstract Readable as stand-alone text – Informative on research and results – Clear key words
Comments: <i>Poor connection between the first and second sentence of the abstract. If the first sentence was left out, it would not be noticed. The third sentence does not transition well into the fourth, which could be solved by mentioning the goal of the study. Although the research process is clear, there are no results, conclusions or further recommendations. It would further be appropriate to mention which four metrics were used to evaluate annoyance. Keywords are clear.</i>
2. Introduction Background information on problem – Clear motivation for research – Research question stated clearly – Structure article discussed if necessary
Comments: <i>Even if 'air traffic continues to grow rapidly every year' is a well-known fact within the industry, a source seems appropriate. Background, Motivation and Research Question is clearly stated, and the Structure of the article is well indicated.</i> <i>In the "Data Description" section 15 aircraft flyovers are mentioned, but in the results only 8 aircraft are presented. If multiple flyovers of a single aircraft were analyzed, it would be advisable to mention how these different measurements are used to get a single result.</i>
3. Method Well-argued – Sufficient definition of concepts – Connection to research question
Comments: <i>The method section seems to meet all technical requirements, being generally well-argued, with all concepts well-defined and the theory presented being related to the research. However:</i> <ul style="list-style-type: none"> - <i>A more detailed explanation of the measurement setup would be appreciated, especially to clarify how speed and altitude were taken from the optical images of the camera.</i> - <i>The definition of the angle alpha used in equation 2 is not completely clear. A graphical representation of the measurement setup could help. Furthermore, the angle alpha in equation 2 could be confused with the parameter alpha in the atmospheric absorption correction section. Changing the name of the angle alpha is recommended.</i> - <i>For the geometrical spreading correction, it seems that only the two-dimensional position of the aircraft is used (x and y coordinates), ignoring possible differences in depth w.r.t. the microphone. If this is related with the setup, an explanation would be appreciated.</i> - <i>The meaning of the parameter L in equation 3 should be specified, and in the paragraph below the distance r0 should include units ($r0 = 1$ [?]).</i> - <i>In equation 4 it seems that the parameter alpha is solely dependent on frequency, but on the paragraph above (and in the equations below) it is shown that it is also dependent on temperature, humidity and pressure. Adjust the equation $\alpha(f)$ for the sake of mathematical consistency. Furthermore, although the parameter alpha is said to be dependent on pressure, no pressure terms appear in either equations 5, 6 or 7.</i> - <i>The definition of Sound Pressure Level, used in the loudness subsection, should be given.</i> - <i>Figure 2 lacks a source and the x-axis has no associated variable.</i> - <i>Equations 8, 9 and 10 lack a source, or the text does not explicitly mention one.</i> - <i>Equation 10 introduces the loudness function $N'(z)$, which is not defined in the text.</i> - <i>If a numerical integration method was used in equation 10, it is not explained in the text.</i> - <i>The origin of the exponents in equation 11 is not explained, and the value for the calibration constant c is not given. If it is taken from source [12], it is not explicitly said so.</i> - <i>The equations for Psychoacoustic Annoyance are dependent on Roughness and Fluctuation Strength, two metrics that have not been explained in the text. A short definition of these concepts is recommended, since they are also used in the sensitivity study in Appendix A.</i> - <i>In the last sentence of paragraph 3 of the Psychoacoustic Annoyance section, the reader is directed to section V for a sensitivity study, but the study is available in Appendix A.</i>

4. Results and discussion Results presented clearly - Validity of results discussed and supported – Relation text/illustrations clear
Comments: <i>The results are clearly presented in Table 1, but the text never refers to this table. Furthermore, in this table no ranking is given for the Psychoacoustic Annoyance, which is supposed to be the final result of this research. Table 1 has a rather confusing way of displaying the ranking, which could be improved by using ordinal numbers. Column 2 of the table shows irrelevant data which could be removed. Table 1 should also have to include units for the metrics being evaluated.</i> <i>The results are further discussed correctly, and wherever strange behavior is encountered, a more in-depth discussion is available with appropriate illustrations. However, in paragraph 4 the explanation of why jumps in tonality are present is rather confusing, especially the last sentence. Furthermore, the fact that data might be "missing or corrupt" as stated in this last sentence is not dealt with in the text. This sentence seems to put into question the validity of the results and it is never addressed. A discussion on the limitations of the study or the methods is not present in the text.</i>
5. Conclusions Link to research question – Follow from previous material – Recommendations further research
Comments: <i>Conclusions are rather confusing since throughout the article it is implied that the main objective is to measure annoyance, but in the end only Loudness, Sharpness and Tonality are evaluated, which are aspects of annoyance and not annoyance itself.</i> <i>Furthermore, the conclusion does not establish a link to the original research question in the introduction regarding airport noise contamination. Other than that, the conclusion does follow the logical flow of the article, and recommendations for future research are given.</i>
Reference use
6. Use of sources Correct references – Good use of literal quotes – Good use of paraphrasing
Comments: <i>Correct but incomplete use of references, since some equations, figures and data still lack a source. No quotes or paraphrasing is used throughout the text.</i>
7. Bibliography References meet requirements – Correspondence references in text and bibliography
Comments: <i>The reference list has the correct layout. However, sources [6], [7], [8] and [9] change the referencing style, having the title of the source in italics rather than in quotation marks.</i> <i>Source [15] is incorrect as well, since it is missing one author, namely Dick Simons, and the title of the study, which is not "Delft University of Technology".</i>
Content
8. Data analysis / research sufficiency Your opinion on the data analysis and research sufficiency
Comments: <i>The methodology used for analyzing the data, as presented in Figure 1, is a valid research method and it seems to have been applied in a correct manner. The tool that is being developed in this research has good potential for application in the industry and could be very promising in the evaluation of acoustic contamination near airports. However, the tool as it is presented in this research only evaluates three annoyance metrics, but not annoyance itself, which seemed to be the objective of the study. Thus, the research seems insufficient for real-world applications, as it must still evaluate the metrics of Roughness and Fluctuation Strength in order to get to a conclusive result on the Psychoacoustic Annoyance of a certain aircraft or airport.</i>
9. Argumentation Your opinion on the academic value of the argumentation – Critical review of literature
Comments: <i>The argumentation follows clearly from research question to conclusion and the literature used is related and applicable to the research. However, the article does not seem to use the sources critically. The methods found in the sources should be discussed before being applied in the study.</i>

Structure
10. Paragraphs Well-constructed – One topic – Clear topic sentences – Clear paragraph structure
Comments: <i>Paragraphs are generally well constructed, follow a logical thread throughout the whole article and usually stay within a single topic, which increased readability. The whole text and especially the Methodology section follows a clear paragraph structure. However, the last two paragraphs of the Results and Discussion section can be merged into one, and the first paragraph of the Conclusions and Recommendations section could be split according to the different topics being discussed.</i>
Style
11. Style and language use Correctness – Objectiveness – Clarity – Attractiveness
Comments: <i>The use of English in the article is very appropriate and never interrupted the flow of information. The text is always clear and objective, remaining appealing throughout all the sections. Only the last few sentences in the Results and Discussion section are confusing and unstructured.</i>
Illustrations and layout
12. Tables and figures Functionality - Number and caption – Reference in text – Reference to source – Legend/explanation
Comments: <i>All figures are numbered and captioned, positioned adequately and used effectively. Some are however not referred to in the text and others are not sourced. Additionally, the time-frequency-power diagrams in Appendix B lack a label for the power axis, and these color graphs are unclear when printed in black and white, so the color scheme should be adjusted. Furthermore, these graphs are captioned with "Dataset 7" and "Dataset 5", but these captions are meaningless within the article.</i>
13. Format Font – Headings – Page lay-out – Adherence to template
Comments: <i>The format of the article is appropriate and pleasant to read. The headings are clear and indicate the structure of the article effectively, which adheres to the article template given. However, spacing between paragraphs varies throughout the text inconsistently. The indentation also seems to change inconsistently, as in paragraph five and six of the Introduction, and in the Results section. It furthermore seems rather unprofessional to have questions in the title of the article. Simply changing it to something along the lines of "Corrections and Metrics of Noise Annoyance in Aircraft Flyovers" would convey the same meaning and be more recognizable as a title.</i>