

18th-20th June 2018



EGTEIC

Environment,
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International Conference

Polytechnic School, University of Extremadura
Cáceres, Spain

Abstracts

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Environment, Green Technology and Engineering International Conference

18th – 20th June 2018

Cáceres, Spain

ISBN 978-84-17238-86-5



Edited by: Santiago Fernández Rodríguez, PhD. and Ramón Sanguino Galván, PhD.

Spain, June 2018

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ABSTRACTS

Modeling and mitigation of noise on the A23 motorway using GIS

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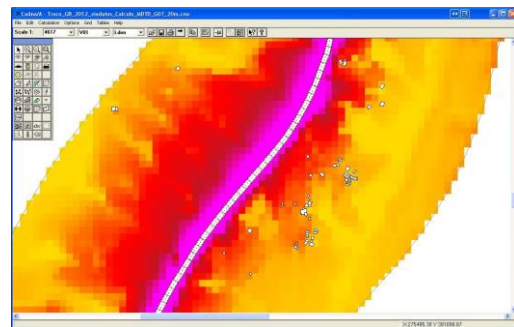
1. Introduction – Studies have shown that the European citizens of the European Community, in 2000, were exposed to noise from road traffic with a total equivalent sound pressure level (L) exceeding 55dBA in more than 44% of the population, i.e. around 210 million people [1], [2].

In fact, exposure to high noise levels can result not only in auditory consequences, but also in hearing loss, as well as non-auditory consequences, such as sleep disorders, mental illness, anxiety, problems with speech intelligibility, physical performance [3].

The present study aims to perform the modeling and characterization of environmental noise for the A23 motorway in the section between Castelo Branco and Alcains (Portugal) using commercial noise forecasting software in order to contribute to its mitigation.

2. Experimental - The method of calculating the model for indicators, and for road traffic noise, is the French calculation method NMPB-Routes-96 (French standard XPS 31-133, [4]). As regards the entry data concerning the issue, these documents refer to the *Guide du bruit des transports terrestres, fascicule prévision des niveaux sonores*, CETUR, 1980.

3. Results and Discussion - An example of the noise map model is shown in the Image 1, for the section between Castelo Branco and Alcains. After the creation of the model and the generation of the Noise Maps for different indicators, the model was validated with road measurement. Information on the population and land use in the study area was also compiled. Land uses of the non-sensitive buildings and sensitive buildings were identified, these being the residential or mixed buildings.



4. Conclusions - The model presented can displaying relevant and accurate information about the spatial distribution of noise around the infrastructures and can be used for supporting the municipal decision makers in the elaboration of their noise maps or for proving several activities which generates noise.

5. References

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ISBN 978-84-17238-86-5



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