

Relationship between objective acoustic indices and subjective assessments for the quality of soundscapes

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Different urban acoustics environments were evaluated using 31 recordings obtained using binaural techniques of recording and reproduction. The relationships of the perception of pleasantness/unpleasantness as described by a sample of 25 inhabitants of these urban environments with two psychoacoustic magnitudes (loudness and sharpness) and two traditional magnitudes (equivalent sound level in dB, L_{eq} , and equivalent sound level in dBA, L_{Aeq}) were analyzed. A logistic regression model was considered to study the relationship between the objective acoustic indices mentioned above and the subjective descriptions of the urban soundscapes. A significant correlation between the perception of a soundscape as very unpleasant and the four objective indices considered for its acoustic characterization is found. No correlation was found between the objective indices and the pleasant soundscapes. L_{Aeq} was the objective index that explained a higher percentage of the variation of the very unpleasant answers. Moreover, L_{Aeq} was the only index that showed a significant correlation with the mean, maximum and minimum values for the items that respondents assigned to the recordings. Furthermore, it was the one with the highest coefficient of determination. © 2015 Elsevier Ltd. All rights reserved.

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