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From Descriptive to Predictive Soundscape Representation

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Regarding the knowledge on psychoacoustics (Zwickers), on phenomenology of perception (Gibson. J. J.) and the results obtained at CAPS-IST (Boubezari-Bento Coelho), a descriptive and qualitative sound map was drawn and a predictive procedure was developed. The method shows that the introduction of human perception during the process of analysis and signal processing makes it possible to target measurements on one or more noise sources selected separately from their background noise. Contrary to conventional measurements, which yield overall values of LAeq, without distinguishing the sources, the method presented here allows a space description of a sound space by making each sound stand out from its context. The method allows the measurement of the range of a noisy source in a given place, the testing of the range or the masking of an urban device (fountain) or contribute to the decision and the design of a specific architectural project, for example. This paper describes the method (and its limits) and the results obtained and shows how a predictive qualitative sound map with low cost is now feasible.