

2pNSa7. Introduction and management of noise low emission zones: LIFE MONZA project. Raffaella Bellomini (Universita' Di Firenze, Via Stradivari 19, Firenze 50127, Italy, raffaella.bellomini@vienrose.it), Rosalba Silvaggio (ISPRA, Rome, Italy), Sergio Luzzi (VIE EN.RO.SE. Ingegneria, Firenze, Italy), and Francesco Borchi (Universita' Di Firenze, Firenze, Italy)

The introduction of *Low Emission Zones*, an urban area subject to road traffic restrictions in order to ensure compliance with the air pollutants limit values, set by the European Directive on ambient air quality (2008/50/EC), are common and well-established actions in the administrative government of the cities and the impacts on air quality improvement are widely analyzed, while the effects and benefits concerning the noise have not been addressed in a comprehensive manner. The definition, the criteria for analysis, and the management methods of a *Noise Low Emission Zone* are not yet clearly expressed and shared. LIFE MONZA project (Methodologies for Noise low emission Zones introduction and management—LIFE15 ENV/IT/000586) addresses these issues. The first objective of the project, cofunded by the European Commission, is to introduce an easy-replicable method for the identification and the management of the *Noise Low Emission Zones*, an urban area subject to traffic restrictions, whose impacts and benefits regarding noise issues will be analyzed and tested in the pilot area of the city of Monza, located in North Italy. Background conditions, structure, and objectives of the project will be discussed in this paper.

4:00

2pNSa8. Beyond the Noise: Open Source Soundscapes. A mixed methodology to analyze and plan small, quiet areas on the local scale, applying the soundscape approach, the citizen science paradigm, and open source technology. Antonella Radicchi (Institut für Stadt- und Regionalplanung, Technische Universität Berlin, Hardenbergstraße 40 a, Sekr. B 4, Berlin, Berlin 10623, Germany, antonella.radicchi@tu-berlin.de)

Today, cities have become increasingly noisier. In Europe, over 125 million people are affected by noise pollution from traffic every year, and apparently, quietness is becoming a luxury available only for the *elites*. There is a growing interest in protecting and planning quiet areas, which has been recognized as a valid tool to reduce noise pollution. However, developing a common methodology to define and plan quiet areas in cities is still challenging. The “Beyond the Noise: Open Source Soundscapes” project aims to fill this gap of knowledge by applying the soundscape approach, the citizen science paradigm and open source technology, with the ultimate goal of making quietness as a commons. Accordingly, a new mixed methodology to analyze and plan small, quiet areas on the local scale has been tested through the development of a pilot study in a Berlin neighborhood affected by environmental injustice and noise pollution. In this pilot study, a number of citizens have been involved in crowdsourcing data related to “everyday quiet areas” by using novel mobile technologies. This contribution illustrates the project’s theoretical background, the methods applied, the first findings of the study and its potential impact.

4:20

2pNSa9. Assessment of the relation between psychoacoustic parameters and the subjective perception of urban soundscapes. Daniel de la Prida, Antonio Pedrero, César Díaz, and María Ángeles Navacerrada (Grupo de Investigación en Acústica Arquitectónica, Tech. Univ. of Madrid, UPM: Escuela Técnica Superior de Arquitectura, Avenida Juan de Herrera n° 4, Madrid, Madrid 28040, Spain, d.delaprida@alumnos.upm.es)

Since soundscapes are strongly related to the human perception, the sound pressure level does not seem to be a sufficient representative of a soundscape by itself. Therefore, the characterization of a soundscape might be improved by using psychoacoustic parameters. A study has been conducted and the relationship between psychoacoustic parameters and the

subjective perception has been analyzed, for a collection of urban spaces. For that purpose, several locations at the city of Madrid have been selected, based on their main use and geometrical features. Then, binaural recordings have been made for several days and different seasons, which allow to observe the relevance of the behavioral differences for the same locations under different conditions. Psychoacoustic parameters, as well as sound pressure level, have been calculated for both the complete recordings and selected parts of them. A semantic differential listening test have been carried out to look for correlations between the calculated parameters and the subjective perception of a panel of participants. Finally, an automatic clustering is presented for the collection of locations. The adequacy of the proposed clustering method is evaluated by comparing the clusters to the psychoacoustic parameters and the subjective responses of the listening test.

4:40

2pNSa10. Music to some, noise to others; reducing outdoor music festivals’ sonic impact on surrounding communities. Case study: KAABOO 2016. Pantelis Vassilakis (AcousticsLab - Acoust. Consulting, 616 W Imperial Ave., #4, El Segundo, CA 90245, pantelis@acousticlab.org) and Aaron Davis (Audio, ECTO Productions Inc., Bensenville, IL)

For music scenes to coexist and thrive alongside residential communities, approaches to the problem of music as noise must acknowledge the impact of noise signal type on listener annoyance levels. The challenge has yet to be properly addressed by the environmental acoustics community, which focuses on measurement standards and mitigation techniques applicable to mechanical noise but unfit to address noise issues related to music. Differences include short versus long range contexts, health versus annoyance considerations, and continuous/unintelligible versus time-variant/intelligible source signals. Noise ordinances often introduce further complications, requiring disambiguation to provide valid/assessable expectations. The presentation outlines how the problem was successfully tackled for KAABOO 2016, a large-scale open-air music festival involving over 100 acts, over 75,000 patrons, and multiple outdoor stages. We discuss (a) working with the city and venue to fine-tune noise ordinance expectations and support valid compliance assessment; (b) designing and deploying sophisticated sound systems, powerful enough to fulfill audience expectations and focused enough to effectively reduce noise impact on the surrounding communities; (c) cooperating with the artists’ teams to appropriately reduce on-site levels; and (d) obtaining relevant noise data prior and during the event to validly capture the event’s noise impact and formally assess compliance.

5:00

2pNSa11. Soundscapes, social media, and big data: The next step in strategic noise mapping. Eoin A. King, She’ifa Punla-Green, and Samuel Genovese (Acoust. Program and Lab, Univ. of Hartford, 200 Bloomfield Ave., West Hartford, CT 06117, eoking@hartford.edu)

The current state-of-the art in noise assessment involves the development of a strategic noise map to identify areas with excessive noise levels, expressed in terms of a single time-averaged noise indicator. While noise maps yield important information regarding sound pressure levels in a particular space, they do not give any representation of the overall sound quality in that space. A more human-centered approach to noise assessment could be achieved by developing soundscapes as a complementary tool to noise mapping. However, most soundscape studies traditionally use surveys or interviews to assess general sentiment toward the acoustic environment, and as such are generally restricted to small geographic areas, compared to the entire cities considered in noise mapping. Instead of using traditional assessment techniques, this project aims to harness the potential of big data, including, for example noise complaint data or social media chatter related to noise, to better assess public sentiments towards soundscapes. This would yield an unparalleled dataset of public opinions and perceptions of the acoustic environment. Initial results based on an analysis of NYC311 complaints and geo-localized data mined from Twitter are presented.

5:20–5:40 Panel Discussion