

AIA-DAGA 2013

Conference on Acoustics



EAA Euroregio - EAA Winter School

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Program



Wednesday

Soundscaping: Understanding (Poster)

Greenery Systems in Historical Urban Centres: Soundscape Evaluation, Design Acoustic ProposalsIlaria Poma^a, Jian Kang^b, Yuliya Smyrnova^b and Arianna Astolfi^c^a*Politecnico di Torino*; ^b*University of Sheffield, School of Architecture (UK)*;^c*Politecnico di Torino - Dipartimento Energia*

European cities are fast growing and noise pollution is becoming a major environmental problem. On the other hand, not many green areas remain in cities. The innovative proposal of this contribute consists in the use of green surfaces on buildings façades to abate traffic noise. Vegetation as sustainable element has gathered an increased attention for potential benefit in enhanced well-being of citizens and also for the resulting soundscape, with sounds and also aural visual interaction, useful for biodiversity. The main aim is the reduction of road traffic noise in the city centre of European cities, characterized by historical constrained buildings. Two real case studies, a square and an urban courtyard, respectively placed in Italy and in England, have been evaluated. For each case study, in situ measurements and acoustic numerical simulations have been performed. To run simulations it has been chosen the software CATT-Acoustic®; then, as results check, simulations have been repeated by using CRR (Combined Ray-tracing and Radiosity) and Odeon®. Acoustic properties of vegetation had been previously analyzed in laboratory. Effectiveness of various types of vegetation and their spatial distribution on the buildings facades to reduce traffic noise have been evaluated.

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Soundscaping: Understanding (Poster)

Soundscape-Sensing in Social Networks

Joao Cordeiro, Alvaro Barbosa and Bruno Afonso

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In this paper we present the design and development stages of a social network mobile application based on soundscapes. The concept falls within the soundscape research and builds upon the assumption that soundscapes represent a valuable contribution for tracing the social context of a given place in a given time. This information is regarded as an important asset on social media interaction. The application includes four modules, which are minutely described in this paper: 1) A soundscape-sensing module that performs a classification task of computational auditory scene analysis, using Zero-Crossing and MFCC audio descriptors and a k-NN algorithm; 2) A client-server database module responsible for storing and distribute the resulting information among the peers of user's social network. 3) A visualization module that shows clusters of peers based on their current acoustic similarities; 4) A web-based history module containing the evolution of users personal soundscapes. Preliminary results on the classification task indicate that simple classification (distinguishing between speech, music and environmental sounds) can be accomplished on

a smartphone (iPhone). Energy resource tests show a considerable increase on battery usage, which may refrain users from use it continuously. Further tests will be accomplished meanwhile.

Wednesday

Soundscaping: Understanding (Poster)

Core Affect, Appraisal, and Motivation

Tjeerd Andringa

University of Groningen

While annoying sounds force us to attend our sonic environment and distract, pleasant sound allow us to engage in self-selected activities. This entails that the sounds that comprise our sonic environment motivate us to behave in certain ways. This paper analyses the relation between core affect, appraisal of the sonic environment, and motivation. It concludes that it make sense to analyze the sounds that comprise the sonic environment in terms of pleasant fore- and background sounds and unpleasant fore and background sounds.

Wednesday

Soundscaping: Understanding (Poster)

Sanitary Soundscapes: the noise effects from ultra-rapid 'ecological' hand dryers on vulnerable subgroups in publicly accessible toilets

John Drever

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A review of the issues arising from a preliminary study of the noise effects of ultra-rapid "ecological" hand dryers in publicly accessible toilets. They are very popular due to impressive data on efficiency, effectiveness, hygiene and speed, the corollary is an increase in noise levels in this socially sensitive environment. The study comprised of a sound power test, followed up by in situ sound pressure tests in a range of different sized WCs. The most extreme example showed for one dryer in situ the equivalent Leq of 19 dryers in a free field environment. From communication on discussion lists and interviews it appears that the noise effects are impacting on a wide range of vulnerable subgroups: breast-feeding mothers, infants and children, dementia sufferers, the visually impaired, hearing aid users and most seriously the discomfort on those with hyperacusis - a condition that is common for those on the autistic spectrum. This study functions as a microcosm for soundscape issues in the urban environment resulting in social exclusion for vulnerable subgroups. To communicate these issues to designers, policy makers and the public at large the project was followed up by the devising and presenting a number of sound art works.