Audio and Communication Signal Processing Group

The Audio and Communications Signal Processing Group (**GTAC**) belongs to the Institute of Telecommunications and Multimedia Applications (**iTEAM**) of the Universitat Politécnica de Valencia (**UPV**). GTAC research activity focuses on active noise control, soundfield control in indoor spaces and any other application related to multi-channel audio rendering. The GTAC laboratory comprises several facilities as a large listening room (40 m2), totally equipped with audiovisual and control instrumentation.

Research Areas

Dynamic Personal Sound Zones

The idea is to provide personalized sound zones within an enclosed area without the need of wearing headphones. For instance, a family can watch the same film, but in one zone of the living room the children hear the film in English and in the other side of the sofa, the mother hears it in Spanish. One step further is to design dynamic zones that can track the person all over the space.

Multizone Active Noise Equalization

Active noise control systems try to suppress an undesired noise by emitting anti-noise signals. One step further is to control the amount of anti-noise emitted such that the perceived undesired noise remains unnoticed, what is called active noise equalization (ANE). Multichannel ANE systems will be able to produce user-defined zones in cars, trains and airplanes.

Acoustic Control in Open-plan Offices

Workers in open offices usually get distracted and annoyed by other people talking and must wear headphones to isolate from the ambient. However, the distraction is mainly caused because the speech level is high enough to be understood. The idea is to use the personal sound system to emit nature sounds, pink noise, or any other wideband sound to get the speech under the human intelligible threshold. The challenge is to render this kind of personal applications for several users/zones in an enclosed space.

Maching Learning for Sound Applications

Open lines in:
- Environmental Sound Classification (ESC)
- Room Impulse Response (RIR) characterization

People

7 Prof and Associate Prof.

3 Postdoc. / 3 PhD

Projects

2 European

70 National and Regional

15 Agreements

3 Patents

Publications

110 Journals

> 250 Conferences

20 Thesis

Contact: Prof. Gema Piñero
gtac_info@iteam.upv.es

www.gtac.upv.es