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Assessment of the impact of spatial audiovisual coherence on source unmasking

OSTIC

The present study aims at evaluating the contribution of spatial audiovisual coherence for sound source unmasking for live music mixing. Sound engineers working with WFS technologies for live sound mixing have reported that their mixing methods have radically changed. Using conventional mixing methods, the audio spectrum is balanced in order to get each instrument intelligible inside the stereo mix. In contrast, when using WFS technologies, the source intelligibility can be achieved thanks to spatial audiovisual coherence and/or sound spatialization (and without using spectral modifications). The respective effects of spatial audiovisual coherence and sound spatialization should be perceptually evaluated.

As a first step, the ability of naive and expert subjects to identify a spatialized mix was evaluated by a discrimination task. For this purpose, live performances (rock, jazz and classic) were played back to subjects with and without stereoscopic video display and VBAP or WFS audio rendering. Two sound engineers realized the audio mixing for three pieces of music and for both audio technologies in the same room where the test have been carried out.

Results are significantly different between sound conditions.

The expertise does not influence the discrimination.

Subjects are able to detect small differences between versions,

- Mixing choices affect discrimination.
- Classical: Conservative mixing conform to the style aesthetics.
- Experts have equivalent scores in audio and audiovisual conditions.
- Assessment by naives is degraded in audiovisual condition.
- Experts have equivalent scores in audio an audiovisual conditions.
- Classic: Conservative mixing conform to the style aesthetics.