

ACOUSTICS2008/2114
Extension of Optimal Source Distribution principle

Takashi Takeuchi

OPSODIS Limited, c/o ISVR, University of Southampton, Highfield, SO17 1BJ Southampton, UK

Binaural reproduction over loudspeaker requires system inversion which is often referred to as cross-talk cancellation. Such process is the major factor to degrade the quality of 3D sound reproduction but Optimal Source Distribution (OSD) provides simple and effective loudspeaker design principle and signal processing which enables lossless crosstalk cancellation process. OSD takes advantage of its physical property where in-phase and out-of-phase components of the binaural reproduction process are balanced, hence the bulk of the crosstalk cancellation is achieved by its loudspeaker design principle and natural interference in the sound field. It is also shown that the advantage of OSD is further enhanced by separating in-phase and out-of-phase components through its loudspeaker design.