

Abstract Submitted
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Three-Dimensional Spatialization in Two-Channel Stereo Sound

MILIND KUNCHUR, Univ of South Carolina, Dept of Physics and Astronomy — Among the variety of audio configurations in use from basic monophonic to complex multi-channel surround-sound systems two-channel stereophonic (stereo) systems have dominated sound reproduction for the purpose of music. Unbeknownst to most of the consumer public, stereo systems in the high end of audio performance can approach the illusion of a live performance, with realistic instrumental timbres and 3D spatialization. Among the three dimensions of the recreated soundstage, the portrayal of elevation remains controversial. In this work, an audio system was assembled that had sufficient fidelity to achieve 3D spatialization, and it was proven through psychoacoustic testing that elevation differentiation of instrumental images can indeed be perceived. The relationship between auditory mechanisms involved in natural-sound localization and stereo-sound imaging is discussed.

Milind Kunchur
Univ of South Carolina, Dept of Physics and Astronomy

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