
4-2 Simulation of Bending Vibration for Sound Radiation Controlling

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We have developed a sound reproduction system that is able to control the directivity of the radiated sound. In the system, a bending vibration is artificially induced on a large planar diaphragm using multiple vibrators. Because the direction of the sound depends on the propagation direction of the bending vibration, the system is able to control the sound directivity by controlling the propagation direction of the bending vibration. In this paper, we demonstrated that (i) the bending vibration of the diaphragm is controllable by adjusting the phase of vibrations with each other and (ii) the radiated sound obtains directivity by a user using the algorithm we proposed.

Keywords

3D audio, Multi-radiated acoustic, Multi-radial loudspeaker, Presence

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