

***Abstract: Near-Coincident Microphone Array Recording Based on a Super Directive Beamformer for a Multi-Channel Audio System***

Seon Man Kim, Jong Gun Kim, Chan Jun Chun, and Hong Kook Kim\*  
*School of Information and Communications*  
*Gwangju Institute of Science and Technology (GIST), Gwangju 500-712, Korea*

**Abstract**

A coincident or near-coincident microphone recording technique tries to capture spatial images in a multi-channel audio system depending on directional-level differences or directivities. Thus, high directivity is required for good spatial quality in a multi-channel audio system; however, currently available microphones have low-order directivities. To overcome this problem, we propose a method to form a super directive sound beam in each steered direction of a multi-channel audio system using closely spaced omnimicrophones. Subjective test results show that the proposed method provides higher spatial quality with lower timbral distortions than other conventional recording methods for stereo and 5.1-channel audio systems.

**Acknowledgement**

This work was supported in part by the Basic Science Research Program through the NRF funded by the Ministry of Education, Science and Technology (No. 2011-0026201), and by the MKE, Korea, under the ITRC support program supervised by the NIPA (NIPA-2012-C1090-1221-0007).