

Subjective evaluation of auralizations created from multi-channel anechoic recordings of a talker in motion.

Michelle C. Vigeant, Lily M. Wang

Architectural Engr. Prog., Univ. of Nebraska - Lincoln, Peter Kiewit Institute, 1110 S. 67th St., Omaha, NE 68182-0681

A high degree of speech intelligibility is very important in educational environments. When designing such spaces, like classrooms, auralizations can be used to subjectively assess the degree of speech intelligibility and clarity. Auralizations are most commonly made by convolving the impulse response (IR) of an omni-directional source with a single channel anechoic speech recording. This paper explores the idea of using multi-channel recordings to create the auralizations, using a female talker in motion. An omni-directional source is split into quadrants and the IR is calculated for each section. These IR's are convolved with the appropriate channel of the anechoic recording and then the four auralizations are mixed to create one final auralization. The auralizations were made using four-channel anechoic recordings of a person walking on a platform while talking. Subjective tests were conducted to determine the ease with which subjects could identify the direction of the movement of the source in rooms with varying amounts of absorption. This method can be used to create more realistic classroom auralizations, as teachers typically move around the room as they teach. [Work supported by the National Science Foundation.]

Vigeant, M.C., and Wang, L.M. (2005) "Subjective evaluation of auralizations created from multi-channel anechoic recordings of a talker in motion (A)." *J. of Acoust. Soc. of Am.*, **117**: 2465