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A means for comparing normal and impaired listeners in spatial hearing

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In our computer controlled Simulated Open Field Environment (SOFE), a computer generates simulated sources and echoes in an anechoic chamber. The SOFE has evolved over many years through ideas and hard work from a superb group of graduate students and post docs including Francoise Briolle, Tom Buell, Poppy Crum, Eric Jensen, Kourosh Saberi, Chris Stecker, Bernhard Seeber, and Miriam Valenzuela, as well as advice from such luminaries as Georg von Békésy, Arnold Leiman and, of course, Jens Blauert. The ready use of Head Related Transfer Functions (HRTFs) with headphones raises the question, "Why the SOFE?" The answer is that each subject enters the environment with his or her natural HRTF and hearing apparatus intact, thus allowing comparisons between patients with cochlear implants or hearing aids, as well as listeners with normal hearing. Since its inception, this environment has been used to examine precedence, the role of relative level in echo suppression, multiple factors in auditory motion perception, and ventriloquism. This presentation will review some of the more interesting results.