

AUDITORY STREAMING AND SEGREGATION INSPIRED DESIGNS FOR AUDITORY DISPLAYS

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ABSTRACT

Conventional approaches to designing auditory displays have relied upon the manipulation of basic acoustic dimensions like pitch, loudness and timbre by linearly mapping them to various dimensions of data. However, our perception and discernment of pitch, loudness and timbre plays an extremely important role in auditory scene analysis, by helping us segregate sources and make sense of the noisy world. This paper explores the phenomena of auditory streaming and segregation, and how controlled settings of simultaneous sources can result in peculiar ways in which frequencies of sources are interpreted by the brain. Some of these phenomena provide us with an opportunity to design innovative data sonification and auditory display systems, that can overcome the limitations associated with previous traditional methods.

