A SIMPLE ADAPTIVE MATRIXING SCHEME FOR EFFICIENT CODING OF STEREO SOUND (ThuAmPO2)

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Abstract :

A generalized scheme for mapping stereo audio channels onto coding channels is considered in the paper. An improved joint stereo transform−based perceptual audio coder is proposed that employs this scheme instead of MS coding. The discussed frequency−dependent matrixing scheme uses a free rotation of the two−dimensional signal space adapted to the dominant direction of arrival within particular frequency bands. This direction is determined using 2−D principal component analysis (PCA) in subbands or groups of transform coefficients. Experimental results show a significantly increased compression efficiency compared to traditional MS coding based on a static matrix. The proposed technique is also more compatible with mono mode since the new M channel represents signal energy that is maximally focused within each band, and the residual energy in S channel is minimized.

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