

ABSTRACT

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The atomic decomposition of signals by algorithms of the class "Matching Pursuit"(MP) has been applied in audio compression. According to the literature, the use of psychoacoustic criteria allows a more compact representation of the signal, with minimal loss of perceived quality. This work describes a scheme of analysis by synthesis of audio signals using MP with direct use of the global psychoacoustic masking threshold, inspired by the MPEG layer I, in addition to Dictionaries of Complex Exponentials (DEC). For signal compression, we use the optimization rate-distortion via operating curves by adjusting the Lagrange multiplier. Its performance of representation is evaluated by an objective measure standardized by the ITU, the PEAQ, and by tests in terms of the number of coefficients needed for representation of signals with high-fidelity.

Keywords: Matching Pursuit; signal decomposition; psychoacoustic.