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Signal Injection With Perceptual Criteria

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**Abstract:** In this paper, a novel method for increasing the coding performance and information transmission capacity is presented. This method is mainly based on perceptual modelling of input signal such as speech or audio. Presented approach may be seen as an alternative to transforms which dynamically change analysis window for better energy compaction. A perceptual model is established in order to obtain a global masking threshold in frequency below which sounds become inaudible. Certain criteria are developed for identifying the signal injection bands. A new multiband filter design method which is a generalization of windowing method is used to separate the inaudible spectrum. These spectral partitions are then used to send additional information. Under the condition that signal injection and synthesis after decoding is done appropriately, injected signal is not audible within the original audio signal. This type of signal injection is especially useful in audio coding and Digital Audio Broadcasting, (DAB).

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