

In the last two decades multimedia have become an integral part of our lives. However, we often face the two clashing requirements – limited storage space or internet connection capacity and the demand for reasonable quality of the media. Compression makes these two requirements more compatible by reducing the amount of data necessary to store the media. This thesis concentrates on sound, particularly lossy or perceptual compression of audio. As opposed to lossless compression schemes, perceptual coders introduce some noise to the signal to make it better compressible by lossless methods. The tradeoff is an impressive coding efficiency provided by most of these coders. The point of interest in designig a lossy audio coder is to make that damage as imperceptible as possible. This is achieved with knowledge of psychoacoustics (exploiting the imperfections of human auditory system), specifically masking thresholds, perceptual entropy, quiet thresholds and many more. This thesis explains some of these phenomena and their practical implementations in modern audio coders. Finally an overview of select modern audio coders is given, including some technical details about their operation and capabilities.