IJARSCT
ISSN (Online) 2581-9429
International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
Impact Factor: 7.53
Volume 4, Issue 4, June 2024

A Comprehensive Review of Psychoacoustic Model for Audio Compression in Signal Processing

Prof . Rahul M. Mulanjkar[1] and Mrs. Bhagyashree Balkrushna Bhoir[2]
Professor, Department of Electronics & Telecommunication Engineering[1]
Student, Department of Electronics & Telecommunication Engineering[2]
JCEI's Jaihind College of Engineering, Narayangaon, India [1]

Abstract: *A Psychoacoustic Model is a framework used in an audio signal processing to understand how humans perceive sound. This models are fundamental to modern audio compression techniques. They exploit the limitations and characteristics of human hearing to reduce data rates without significantly compromising perceived audio quality. This report explores the principles of psychoacoustic models, their applications in various audio codecs and their impact on audio compression efficiency.Psychoacoustic models of human auditory perception have found an important application in the realm of perceptual audio coding, where exploiting the limitations of perception and removal of irrelevance is key to achieving a significant reduction in bitrate while preserving subjective audio quality. To this end, psychoacoustic models do not need to be perfect to satisfy their purpose, and in fact the commonly employed models only represent a small subset of the known properties and abilities of the human auditory system. This paper provides a tutorial introduction of the most commonly used psychoacoustic models for low bitrate perceptual audio coding.*

Keywords: Psychoacoustic Model, Signal Processing, Audio Compression, Masking