



# Computational Cognitive Analysis of ADHD Patients using Matlab Applications

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##### Abstract:

Children with particular needs may benefit from the practical and economical therapy of audio-visual entrainment. Establishing brain wave entrainment as a corrective treatment for ADHD and autistic youngsters in society is the goal of this research effort. It will be accomplished by carefully examining the same subject's EEG signals both before and after they listen to specifically created 14 Hz binaural beats. The goal is to formally demonstrate that beta-wave brainwave entrainment has the power to significantly alter the psychosocial outcomes of ADHD and autism patients. It will be accomplished with the use of MATLAB-based mathematical analysis. Attentional illness is often accompanied by a number of issues, including unease and melancholy, which adds to the complexity of treatment options. A drug-free method of treating ADHD symptoms and enhancing focus and memory is brainwave entrainment. Later, this technology may be used by medical professionals and therapists to help people with ADHD.

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The most complicated and poorly understood organ in the human body is the brain. Neuroscientists still do not completely comprehend the human brain, despite the fact that we have made enormous strides in domains like aeronautical science. Over the course of a few thousand years of human civilization, prominent thinkers from antiquity and modern scientists have all agreed that music therapy may aid in achieving the desired states of relaxation and contentment while enhancing brain functioning [1]. The study of binaural beat entrainment began in the eighteenth century, opening a new area of study for electroencephalography (EEG) and the rhythmic brain entrainment of low frequencies similar to brain waves to alter and improve human brain function. Today's popular mental health approaches include TMS, binaural waves, and conventional music therapy [2].

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