

# Enhanced Target detection using P300 and Gamma Band Analysis

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## ABSTRACT

We present a novel method which uses the P300 amplitudes and Gamma band energy for enhanced target detection in P300 paradigms which are being researched towards a brain biometric system. The novelty of this work lies in the usage of both P300 amplitudes along with gamma band features which were calculated from averaged waveforms using thirty trials (Target and Non-target) for eight channels. P300 amplitudes was calculated in the 300-600ms range and Gamma band energy was computed in the 30-50 Hz using Shannon energy for target and non-target. A simple decision maker was used to classify the obtained feature vectors. Initial results confirm the possibility of using gamma band energy along-with P300 analysis in an oddball paradigm for better classification accuracies. This study offers motivation warranting further need to explore the links between P300 and Gamma band in P300 paradigms.