



## COMPARATIVE PERFORMANCE OF TIME--FREQUENCY BASED EEG SPIKE DETECTION TECHNIQUES (ThuAmPO3)

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### ★ Abstract :

This paper investigates the performance of time–frequency based EEG spike detection techniques. The nonstationary nature of EEG makes time–frequency methodology a suitable tool for analysis. The high instantaneous energy of spikes are reflected as very localised energy patterns in the time–frequency domain with reduced time duration toward the high frequency area. These characteristics of spikes in the time–frequency domain makes them recognisable from the background. Two recently published spike detection methods, based on quadratic time–frequency and adaptive time–frequency parameterisation are considered in this investigation. These methods have been applied on both synthetic and real EEG signals. The obtained results show the superior performance of the quadratic time–frequency method for detecting EEG spikes in terms of resolution and robustness to noise.