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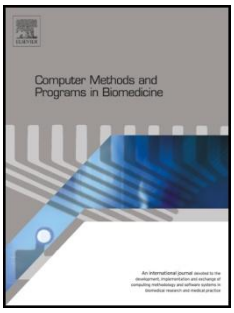


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# Epileptic seizure detection in EEG signals using tunable-Q factor wavelet transform and bootstrap aggregating

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**Highlights**

- A new automated diagnosis scheme is proposed for detecting epileptic seizure from Electroencephalogram (EEG) signals.
- This scheme is developed based on Tunable-Q factor wavelet transform (TQWT) and bootstrap aggregating (Bagging).
- In this study, the TQWT is introduced for first time in the Epileptic seizure detection with time spectral features in conjunction with Bagging.
- Efficacy of the method is confirmed by statistical and graphical analyses.
- The performance of the proposed scheme, compared to the existing ones is promising.
- The proposed methodology will able to alleviate the burden of medical professionals of analysing a large bulk of data, speed-up epilepsy diagnosis and benefit epilepsy research.

**Abstract**

*Background and objective:* Epileptic seizure detection is traditionally performed by expert clinicians based on visual observation of EEG signals. This process is time-consuming, burdensome, reliant on expensive human resources, and subject to error and bias. In epilepsy research, on the other hand, manual