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A New Automatic Sleep Staging System Based on Statistical Behavior of Local Extrema Using Single Channel EEG Signal

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## Highlights

- A novel time domain feature is proposed for design an automatic sleep scoring system.
- The method employs a new symbolic idea to explore hidden dynamics of EEG sleep stages.
- The effectiveness of the features is validated by statistical and graphical analysis.
- Compared with other existing methods, our method provides robust and superior results.

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