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EEG-base study of driver's cognitive response in virtual traffic light environment via parametric spectral analysis in term of event related potential (ERP) MD RESHAD UL HOQUE, GLEB TCHESLAVSKI, none — Traffic accidents due to the lack of concentrations during traffic light changes are common and may lead to fatalities. Studies of driver's cognitive response to traffic light may be important to mitigate such road accidents. The present report discusses the analysis of Electroencephalogram (EEG) recorded in the virtual traffic light environment. After preprocessing, event related potentials (ERPs) are evaluated for the red, green, and yellow traffic light stimuli. ERPs are analyzed via parametric spectrum analysis (Burg method and modified covariance method) and the corresponding features are calculated. Our results indicate that drivers may respond differently to different traffic lights suggesting that an EEG-based detection of traffic light may be possible.

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None

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