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Reliability Verification of Vehicle Speed Estimate Method in Forensic Videos

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Highlights

- The driver overspeed is one of the critical issues of traffic accident analysis.
- Forensic videos in traffic accidents are employed as important proof.
- The VSEM is a vehicle speed estimate method in forensic videos.
- The VSEM does not require a complex methodology and algorithm.
- The VSEM can analyze a vehicle speed with sufficient reliability.

ABSTRACT

In various types of traffic accidents, including car-to-car crash, vehicle-pedestrian collision, and hit-and-run accident, driver overspeed is one of the critical issues of traffic accident analysis. Hence, analysis of vehicle speed at the moment of accident is necessary. The present article proposes a vehicle speed estimate method (VSEM) applying a virtual plane and a virtual reference line to a forensic video. The reliability of the VSEM was verified by comparing the results obtained by applying the VSEM to videos from a test vehicle driving with a global positioning system (GPS)-based Vbox speed. The VSEM verified by these procedures was applied to real traffic accident examples to evaluate the usability of the VSEM.

Keywords: VSEM (Vehicle Speed Estimate Method), Forensic Video, CCTV, Car black box(vehicle on-board video camera), Vehicle Speed, Virtual Plane, Virtual Reference Line

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