

Dynamics of frontal crash in/without the presence of passive safety systems

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Abstract

The paper aims to debate on experimental retrieved accelerations from real crash tests, based on different scenarios, to enable assessment on driver potential injury. Scenarios included the presence of passive safety systems (e.g., airbag, seat belt) and test data are being processed to estimate the head injury criteria (HIC) followed by its correlation with abbreviated injury scale values (AIS). A dummy, average male resemblance, was developed in-situ and used in the experimental configuration. Signals were being acquired by few accelerometers disposed on the dummy's head and thorax using a Pic DAQ system (DSD, Linz, Austria). Data processing and values of injury criteria underline the importance of passive safety systems proven HIC experienced a consistent decrease in the presence of both air-bag and seatbelt.

Keywords: drivers, injury, safety systems, both air-bag, seatbelt

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