



DISTRACT – Causes and impact of driver distraction through a driving simulator study

Scientific Responsible
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The objective of this research is the analysis of causes and impacts of driver distraction. Distraction sources may be exogenous (use of mobile phone, conversation with passengers etc.) or endogenous (mild pathological conditions, e.g. mild cognitive impairment, early Alzheimers or dementia etc.). These are examined jointly for the first time internationally. A driving simulator experiment is carried out, comprising a medical/neurological and neuropsychological evaluation of the participants, and a set of driving tasks for different scenarios. The participants comprise two distinct groups from the general population: a group of individuals with mild pathological conditions, and a group of healthy individuals. Models of driver distraction are then developed in order to identify and rank the causes of distraction. Models of driver behavior and safety are also developed, in order to quantify the impacts of distraction. Driver speed and vehicle position on the lane are modeled in relation to distraction, road / traffic conditions, driver characteristics etc. Moreover, driver reaction time and accident probability are modeled within the occurrence of unexpected incidents. Measures for the improvement of driver behavior are finally proposed.