

# Evaluating the Influence of Distractions to Drivers Based on Reflex Eye Movement Model

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**Abstract:** This article reviews some of our important works in the last four years in which operators' workload was quantified using their eye movements. Human's reflex eye movements, such as vestibulo-ocular reflex (VOR) and optokinetic reflex (OKR), are known to be accurately predictable since they are reflex movements invoked by specific inputs, such as head movements and visual stimuli. Our research calculates gaps between the simulated eye movements and actual eye movements, and uses the degree of the gaps as an index to objectively quantify the operator's distraction level. Chapter 4 shows the relationship between a higher cognitive task and our reflex eye movement measures. Chapter 5 shows the relationship between an attention task and the reflex eye movement measures. The results indicate that reflex eye movement measures may be usable to objectively quantify drivers' distraction levels.

*Keywords:* Human error, Models, Mental workload, State estimation, Drivers.

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