Assessment of the Impacts of Surrounding Trucks on Rear-end Crash Risk

Dhwani Shah

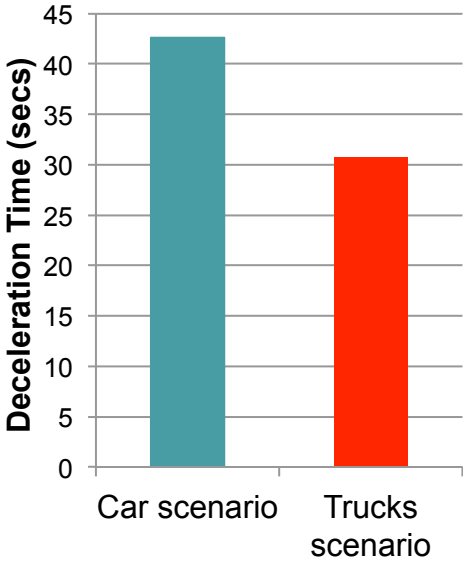
Chris Lee

Department of Civil and Environmental Engineering
University of Windsor, Canada

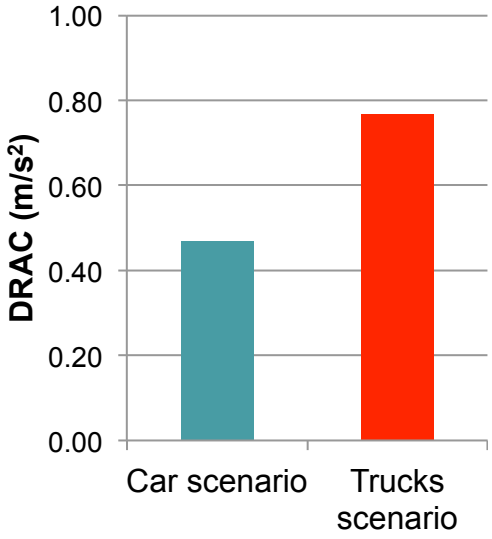
- **Objectives** - to observe how the types of surrounding vehicle (car or truck) affect car drivers' behavior and rear-end collision risk
- **Method** - 50 car drivers' behaviour was observed and a surrogate safety measure (SSM) was estimated using the driving simulator
- Drivers encountered a stop truck while inter-acting with surrounding cars only (**Cars scenario**) or surrounding trucks only (**Trucks scenario**)

- **Deceleration to avoid crashes (DRAC)** was calculated using vehicle trajectories only when drivers actually applied brake or released accelerator pedal to avoid collision with the stopped truck

- **Results**



Shorter deceleration time for Trucks scenario → Drivers had poor visibility of the stopped truck and took shorter time to decelerate



Higher DRAC for Trucks scenario → Rear-end collision risk was higher when surrounding vehicles were trucks