

Investigation of the Role of Different Sensory Cues in Driving an Agricultural Vehicle

D. Karimi, D. Mann

CSBE08154

Driving is an interactive process in which the driver receives the information about the state of the vehicle and its relation to the environment through visual, motion, haptic and auditory cues. Successful and comfortable control of the vehicle requires certain level of sensory cues to be available to the driver. This depends on factors such as the driving task at hand and vehicle dynamics.

This paper describes our study on the role of different sensory cues in the driving of an agricultural vehicle. Field experiments were performed in which experienced tractor drivers drove a tractor in the parallel swathing mode using a lightbar GPS guidance system and performed certain maneuvers. Then, these experiments were repeated in a tractor driving simulator, which enabled us to provide the drivers with different patterns of sensory cues. The results of the study have been presented in terms of the effect of the visual, motion, and haptic cues in driving an agricultural vehicle.