東京農工大学　ドライビングシミュレータ

Driving Simulator (Exterior)

Driving cabin (Interior)

ドライビングシミュレータを利用した自動車の予防安全装置

Study on Active Safety Systems Using Driving Simulator

- ## ドライバの運転特性を調べる

  Study on human-driver characteristics when driving in various situations.

- ## 自動車の予防安全装置の効果を確認する

  Verify the effectiveness of active safety systems (driver assistance systems)

ドライビングシミュレータを利用した利点

Advantages of Using Driving Simulator

- ## 道路環境の条件設定の再現性

  Reconstruction of the driving scenario easily.

- ## 人間特性・車両走行データの測定の容易さ

  Easy to measure the driver behavior, environment and the vehicle dynamics.

- ## 実環境では困難な危険場面の実験が可能

  Possible to conduct driving experiments in critical scenario

T.U.A.T. Driving Simulator

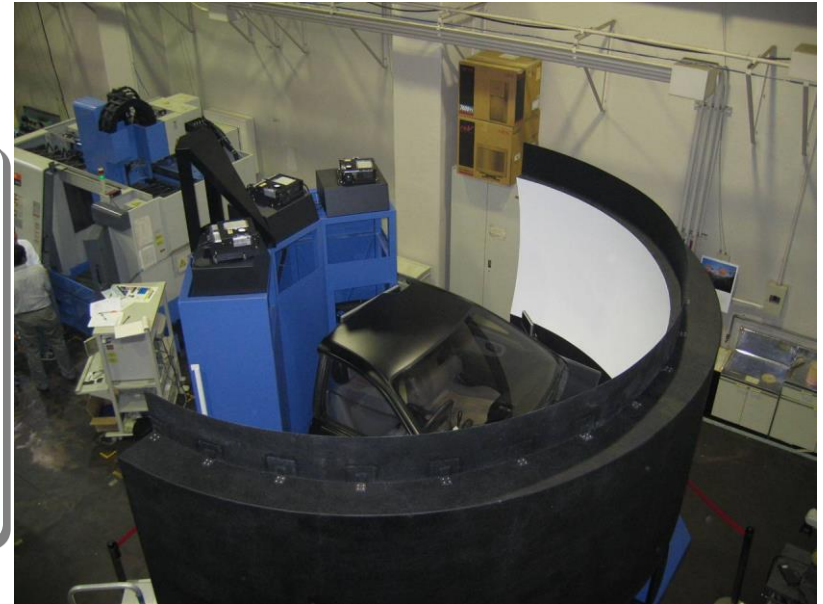New reconstructed simulator : **cylindrical screen**

Running Condition

Screens: Highway mode
            Urban mode

Driving: Passenger car mode（**DS#1**, DS#2）,
            Electric wheelchair（DS#2）

Subsystems	Description
Simulator Cabin	3540 w x 3200 d x 3146 h
Visual System	Refresh Rate ： 60Hz　　　SXGA
	Visual field ： 180deg(h)×30deg(v)
Motion System	Maximum Displacement ：
(simulator #1)	x +260 mm , -300 mm　　y +260 mm , -260 mm　　z +330 mm, -270 mm
	roll +15 deg , -15 deg　　pitch +16 deg , -14 deg　yaw +13 deg , -13 deg
	Maximum Speed ： x ,　　y ,　　z ： ±350 mm/s
	roll , pitch , yaw ： ±25°/s
	Maximum Acceleration ： x, y, z ： ±0.5 g

T.U.A.T. Driving Simulator

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VTEG : Virtual Transportation Environment Generator
DRIVING SIMULATOR

Image Generator PCs
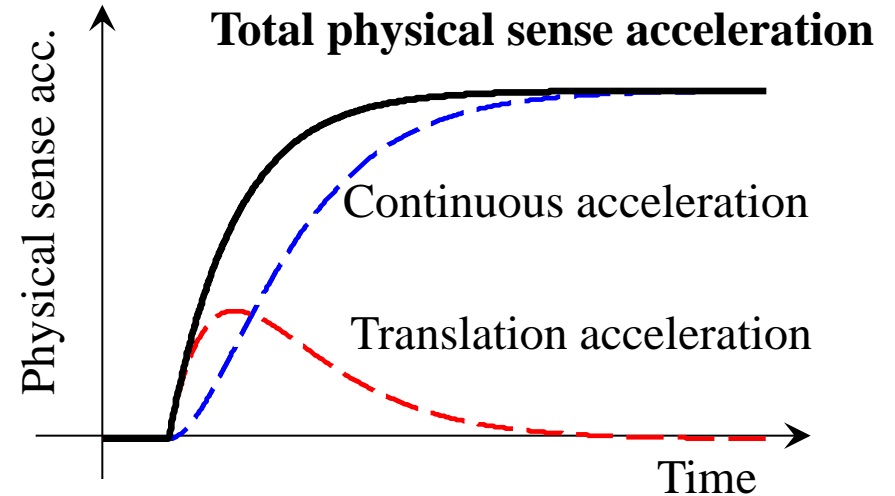
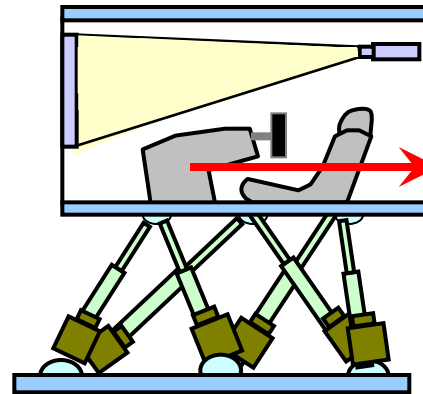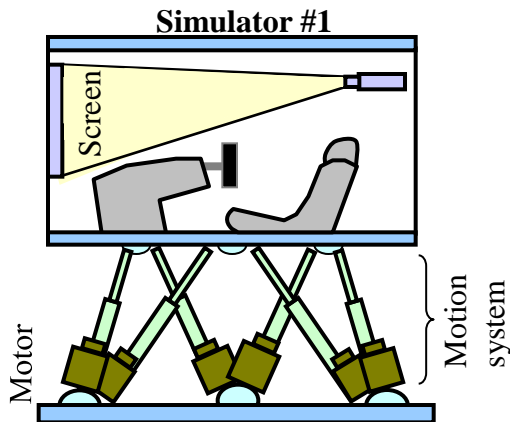3 Projectors for Front view scenery

Driving simulator visual system

T.U.A.T. Driving Simulator

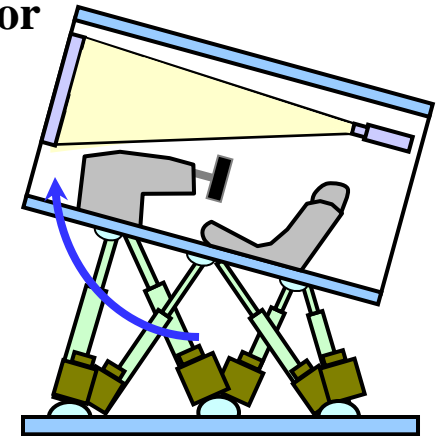*Tokyo University of Agriculture & Technology*
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Motion Cueing System

Total physical sense acceleration

Physical sense acc.

Continuous acceleration

Translation acceleration

Time

Acceleration/Braking behavior

Simulator #1

Screen

Motor

Motion system

Initial stage

Steady state

T.U.A.T. Driving Simulator

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