SUDA LAB.

[Dynamics and Control of Vehicle]

Institute of Industrial Science  Advanced Mobility Research Center (ITS center)

Dynamics and Control of Vehicle

http://www.nozomi.iis.u-tokyo.ac.jp

Study on Mobility Systems with Advanced control, Multi-body Dynamics, Human Factors, Vehicle system applied AI, for Sustainable Mobility.

1. Analysis and optimization of human-vehicle-infrastructure boundary area
   Dynamic analysis and Modeling of Vehicle with Multi-body dynamics, Contact mechanics of Wheel/Rail and Tire/Road,
   Dynamics Control and monitoring in Boundary area, R&D of HMI (Human / Mechanical system),
   Improvement of curving performance for railway vehicle, Free access Platform Gate

2. Study on Driver Characteristics and Automated Driving
   Steering performance a motion just as intended by a driver, Truck automated driving and Platoon project,
   Practical study of Automated Driving Bus

3. Study on transportation system of new method
   Clarification of social significance, Basic performance evaluation of vehicle, Ecosystem considering the whole system from control system design to operation, R&D in consideration of technical standards and legal maintenance for practical use (PMV, eco-ride ...)

4. Study on mobility with AI and biological information measurement
   Machine Learning and Big Data Analytics, Detection of vehicle abnormal state and derailment,
   Evaluation method of driving skill by driver behavior and brain activity measurement

5. Study on comfort and social acceptance in mobility
   Engineering research group activity on comfort, Comfort evaluation of railway vehicle, Quantitative evaluation method,
   Seat arrangement of commuter train and automobiles, Evaluation of social acceptability by business ecosystem

6. Integrated research of ITS (Intelligent Transport Systems) and advanced mobility
   Sustainable ITS project, Development of mixed reality transport experiment space, Tohoku Reconstruction Energy and Mobility Management, Parking lot ITS project, Mobility Innovation Collaborative Research Organization, The University of Tokyo (UTmobil)

7. Regional Collaborative Research / International Collaborative Research for Social Implementation
   Kashiwa City (Kashiwa ITS Promotion Council) , Nagasaki Prefecture, Hiroshima City (ASV Project in Hiroshima), Ishinomaki City...

8. Development of Proving Ground for Advanced Mobility Research
   Driving simulator, Railway test track, Test field for automobile and road traffic, Traffic light

Multibody Dynamics and Control

Railway Vehicle

ITS & Automobile

Comfort and Human Interface