



# SUDA LAB.



## [Dynamics and Control of Vehicle]

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

Dynamics and Control of Vehicle

Department of Mechanical and Bio functional Systems

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

### Study on Vehicles with Advanced control, Multi-body Dynamics and Environmental Physiology for Sustainable Mobility.

#### 1. Dynamics and Monitoring of Vehicle-Infrastructure-Human System

Improvement of curving performance for railway vehicle, Detection of vehicle abnormal state and derailment, Contact mechanics of Wheel/Rail and Tire/Road, Driver characteristics and modeling, Brain Activity Measurement, Sensing using Quasi Electrostatic Field, Personal mobility vehicle, Machine Learning and Big Data Analytics, Free access Platform Gate

#### 2. Study on social acceptability and comfort for transportation systems

Ecosystem, Evaluation method, Seat arrangement of commuter train and automobiles, Cabin design of "EcoRide"

#### 3. Dynamics and Control of Vehicle Systems

Dynamic analysis of railway vehicle, Automobile, Bicycle, Personal Mobility Vehicle, Multi-body dynamics, Self powered and advanced active vibration control applied to ground vehicles, ship, elevator and maglev system

#### 4. ITS (Intelligent Transport Systems) Projects

Sustainable ITS project, Truck Platoon project, Autonomous Driving project, Inter-vehicle communication, ASV project in Hiroshima

#### 5. Study on Advanced Mobility with Motion Simulators

Development of mixed reality transport experiment space, Comfort evaluation of railway vehicle, Experimental platform for scaled model vehicle

#### 6. Development of Proving Ground for Advanced Mobility Research

Driving simulator, Railway test track, Test field for automobile and road traffic, Traffic light

