



# SUDA LAB.

## [Dynamics and Control of Vehicle]

Institute of Industrial Science

Advanced Mobility Research Center (ITS center)

Department of Mechanical and Bio functional Systems

Mobility and Field Science, Social Cooperation Program

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

Specialized Field ● Dynamic Systems and Control

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

#### 1. 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

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

Sustainable ITS project, Energy-saving ITS project, Inter-vehicle communication, ASV project in Hiroshima

#### 3. 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

#### 4. 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, Onboard flywheel battery system, Personal mobility vehicle, Variable-boarding-location-type automatic platform gate

#### 5. Study on Comfort

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

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

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

