# K. NAKANO LAB.

## Safe and Comfort Mobility for Everyone

Department of Mechanical and Biofunctional Systems, Advanced Mobility Research Center (ITS Center)
Interfaculty Initiative in Information Studies

Mechanical and Biological Systems Control
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While attention on automated driving of automobiles increases, aiming for augmentation of a driver, human oriented mobility engineering researches such as shared control, human-machine interface, and high level sensing have been conducted. The followings are topics of our researches.

1. Research and Development of Human Machine Interface for Driver Initiated Take-over
2. Evaluation of Performance of Shared Control
3. Driver Model for Shared Control
4. Intention-Based Lane Changing and Keeping Haptic Guidance Steering System
5. Trajectory Prediction of Surrounding Vehicles Based on Traffic Scenario Understanding
6. Model Predictive Control Based Minimal Risk Manoeuvre Due to Perception Failure of Automated Vehicles
7. Energy Harvesting in Rotating Body
8. Decreased Deceleration Detection of Railway Vehicle
9. Estimation of Condition Between Rail and Wheel from Measured Values of a PQ Wheel
10. Unified Traffic Control System for Railway and Road Vehicles Using Mobile Phone Line
11. Building the Method for Social Implementation of Automated Driving Technology Complying with Actual State Based on ELSI
12. Activities to Realize Level 4 Cooperated Automated Mobility Service