



Advanced Mobility Research Center (ITS Center)

先進モビリティ研究センター(ITSセンター)
http://www.its.iis.u-tokyo.ac.jp/

Intelligent Transport Systems

Suda Lab, Nakano Lab, and Suzuki Lab (Dept. of Mechanical and Biofunctional Systems)

Ikeuchi Lab and Oishi Lab (Dept. of Informatics and Electronics)

Oguchi & Kuwahara Lab, Tanaka Lab, Sakamoto Lab, and Makino Lab (Dept. of Human and Social Systems)

- ITS (Intelligent Transport Systems) is an advanced transport system in which various fields, such as transport engineering, vehicle engineering, information technology, are integrated.
- The Advanced Mobility Research Center promotes research and development of ITS through collaboration of academia, public, and private sectors.

Research Activities



History

- 2003.4 "Sustainable ITS", a cooperative project among academia, industry, and the government, started in CCR
- 2005.3 "Collaborative Research Center for Advanced Mobility (ITS Center)" established in IIS (Director: Prof. Dr. Ikeuchi)
- 2009.4 Upgraded to "Advanced Mobility Research Center (ITS Center)," an university-authorized research center (Director: Prof. Dr. Kuwahara)
- 2010.4 Prof. Dr. Suda elected as a director

Next-Generation Infrastructure

Signal control

Drivers' stopping/passing behaviors at yellow time, which may raise the risk of intersection accidents (dilemma zone), analyzed by DS experiment



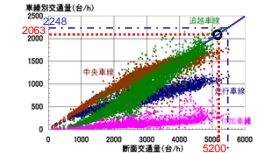
On-street Parking

Influence of on-street parking on traffic flow and safety evaluated using TS and DS, and a parking space design with little influence on those proposed



Dynamic Traffic Operation

Effect of dynamic traffic operation, such as dynamic hard shoulder opening, analyzed and the safety issue evaluated



Road Space Design



"Optical Dots" developed for safe and comfort driving, adopted by Tokyo Metropolitan Expressway

Public Address System in Tunnels



Public address system developed for the case of emergency evacuation in long tunnels, adopted by Tokyo Metropolitan Expressway

Nagasaki EV & ITS Project

Project for establishing an environment-friendly and future-oriented tourism system using Electric Vehicles (EV) and ITS technologies, launched in Goto Islands, Nagasaki Prefecture



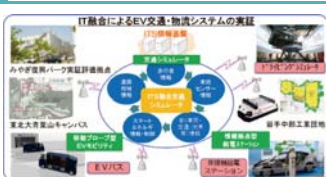
Kashiwa ITS FOT Model City

ITS research activities launched for environment-friendly transport society in kashiwa City, which is designated as one of the ITS FOT model cities by the Cabinet Office of Japan



Tohoku Restoration Project

"R&D center for verification and evaluation of the next generation automobile industry creation by IT fusion" of Tohoku Bureau of Economy, Trade and Industry, has been carried out as a joint research in our center with local businesses centered around the Tohoku University.



Next-Generation Vehicle

Electromagnetic Suspension

Composed of an electric motor and a ball-screw-and-nut, for an active suspension of an automobile



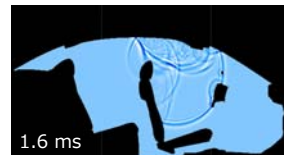
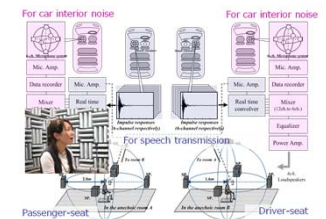
Analysis on Vehicle's Vibration

Monitoring system of vehicle's vibration using ICA, which is a signal processing method to extract characteristics from mixed complicated observing signals, developed



Sound Field Analysis and Assessment in Vehicles

Sound field prediction and assessment carried out by numerical analysis to create the acoustical comfort in vehicles



In-vehicle Layout

In-vehicle layout for improving passenger ride comfort adopted by Tokyu 7000 Series



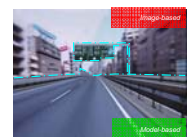
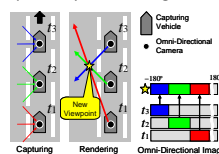
Personal Mobility Vehicle (PMV)

Environment-friendly new urban transportation mode for comfort & efficient short-distance trip



Driving-view Display System

Expression of urban space with rich reality by processing real-world image data acquired by the sensing vehicles



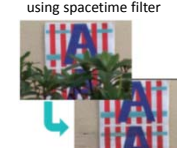
Virtual City Modeling

Constructing virtual city model using on-vehicle sensors

• Example of 3D modeling



• Background separation using spacetime filter



• True color estimation of building surfaces

