



K. Nakano Lab.

[Measurement and Control in Mobility]

Advanced Mobility Research Center

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

Mechanical and Biological Systems Control

Interdisciplinary Information Studies, Mechanical Engineering

Human-oriented Mobility Engineering

Based on knowledge of signal processing, control and vibration engineering, we are carrying out studies on active vibration control, personal mobility, multi-channel signal processing method such as independent component analysis applied for condition monitoring, driving ability of elderly drivers, and estimation of condition of a driver through measurements of bio-signals. Human-oriented studies on control and signal processing for vehicles and humans are widely being conducted.

Mobility engineering using bio-signals

- ◆ Evaluation of driving ability of elderly drivers with white matter lesions
- ◆ Haptic guidance control

Human factor research on automatic platooning using a driving simulator

Estimation of parameters of trucks for automatic platooning during travelling

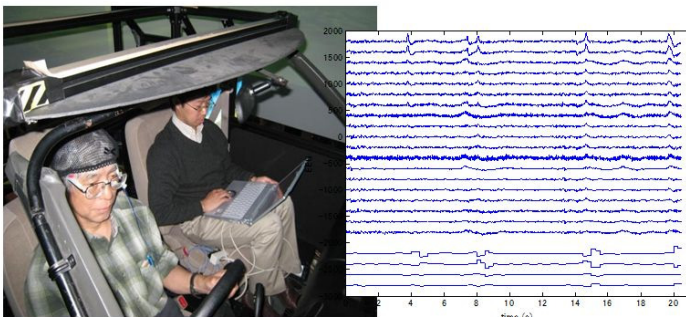
Independent component analysis applied to measurement of vehicle vibration

Development of ITS to railway vehicles

Personal mobility vehicles

Energy harvesting using stochastic resonance

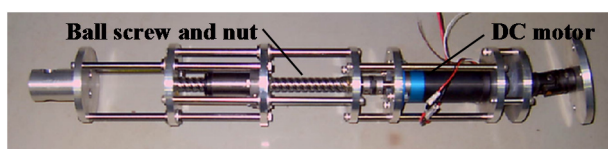
Electromagnetic suspensions



Analysis on EEG of a driver manipulating a driving simulator



Vibration analysis on a railway bogie using ICA



Electromagnetic actuator for an automobile suspension



Test of driving ability of elderly drivers

Experiments on a truck DS