

HASEGAWA LAB.

[Prediction and Control of Transport Phenomena]

Center for Research on Innovative Simulation Software

Interfacial Transport Engineering

Department of Mechanical Engineering

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

Inverse Problems in Thermo-Fluids Engineering

Due to rapid development of computational capability, it becomes possible to simulate complex transport phenomena in thermo-fluids systems. However, it is still difficult to extract major factors and effective design strategies from obtained results. Our group aims at adding new values to large-scale simulations by applying advanced optimization techniques. Specifically, we are working on optimal control of turbulent transport phenomena, shape optimization of complex interfaces and estimation of thermal and flow fields based on noisy sensing signals. We also investigate coating and drying of complex fluids for developing fabrication processes of energy devices.

