

# **Stable manifold approach for Hamilton-Jacobi equations in optimal control theory with applications**

Noboru Sakamoto (Nagoya University)

Hamilton-Jacobi equations (HJEs) have been the bottle neck in the application of optimal control theory for many decades. Recent years a progress has been made for solving HJEs via stable manifold theory in dynamical system theory. In this talk, the computational theory of stable manifolds and its algorithm will be introduced for finding the solution of HJEs in optimal control theory. Next in this talk, the applications of the computational method will be presented. The field of applications ranges from aircraft control to mechanical systems with strong emphasis on its applicability to real world problems.