Junction conditions on the interfaces for optimal control problems on multi-domains

Zhiping Rao

The talk is devoted to the finite horizon optimal control problems on multi-domains, which consists of a union of finite subdomains separated by interfaces. Namely a low dimensional subset of the state variable space where discontinuities in controlled dynamics and costs take place. The goal is to identify the junction conditions on the interfaces such that the optimal control problem involving the trajectories switching between the subdomains or staying on the interfaces is well defined and the associated Hamilton-Jacobi-Bellman equation has a unique solution.