國立陽明交通大學應用數學系
學術演講公告

主講人：Professor Norikazu Saito (University of Tokyo)

講　題：Decoupling iterative numerical methods for mean field games

時　間：114 年 10 月 21 日(星期二) 下午 14:00 –15:00

地　點：(光復校區) 科學一館 213 室

Abstract

Mean field games (MFGs) are formulated as nonlinear coupled systems of partial differential equations, consisting of the Fokker–Planck equation, which governs the density distribution of agents, and the Hamilton–Jacobi–Bellman equation, which describes the temporal evolution of their control inputs. Such systems arise in a broad range of applications, including crowd dynamics, control of autonomous vehicle fleets, mathematical biology, engineering, and economics. Since MFGs are typically posed as space–time boundary value problems, numerical schemes designed for standard initial value problems cannot be directly applied. This motivates the development of new computational methods together with a rigorous mathematical foundation. In this talk, I present an implementation-friendly approach based on a generalized conditional gradient (GCG) method and discuss its convergence properties. In particular, I report recent results, obtained in collaboration with H. Nakamura, for MFGs with local coupling terms.

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