



復旦大學
FUDAN UNIVERSITY

Applied Math
Ph.D. Seminar

Projected Policy Gradient Converges in a Finite Number of Iterations

Speaker: Jiakai Liu (Fudan University)

Time: 2023-11-30, 16:10 to 17:00

Location: Rm 1801, Guanghua East Tower

Advisor: Ke Wei (Fudan University)

Abstract: In this talk, we introduce the convergence properties of the projected policy gradient (PPG) method. We demonstrate that this method indeed achieves the exact convergence in a finite number of iterations for any given constant step size. To establish this result, we first establish the sublinear convergence of PPG for an arbitrary fixed step size, which is also new, to the best of knowledge. The finite iteration convergence property is also applicable to a preconditioned version of PPG, namely the projected Q-ascent (PQA) method. Additionally, the linear convergence of PPG and its equivalence to PI are established under the non-adaptive increasing step sizes and the adaptive step sizes, respectively.