

Best Response Dynamic with Incentive-dependent Speed

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Abstract

While inertia and myopia are essential assumptions on best response dynamic (BRD), the dynamic has some other technical assumptions. In this paper, we argue the independence of convergence speed from the incentive. We modify BRD so that each player's revision rate increases continuously with the incentive to switch the action, i.e. the optimized payoff minus the current payoff. First, we see the equivalence with having a stochastic status-quo bias. Second, the modified BRD keeps the stability of Nash equilibria in potential games, stable games, and antcoordination games. Finally, our modified BRD eliminates some pathological multiplicity of BRD paths, while keeping natural one resulted from coordination problems, for example.

Keywords: best response dynamic, revision rate, status-quo bias, multiple solution paths, proper equilibrium

JEL classification: C62, C73, D01

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