

Abstract:

"This paper analyzes submodular games of incomplete information under general conditions. In particular, when beliefs are ordered either increasingly or decreasingly by first order stochastic dominance, the existence and uniqueness, monotonicity, comparative statics, and the stability of equilibria in this broad class of games are addressed. Unlike their super-modular counterpart, where the effect of an increase in type augments the strategic effect between own strategy and opponent's strategy, submodularity produces competing effects when considering optimal responses. Using adaptive dynamics, conditions are given under which such games can be guaranteed to exhibit Bayesian Nash equilibria, and it is shown that in many applications these equilibria will be a profile of monotone strategies. Comparative statics of parameterized games is also analyzed using results from submodular games which are extended to incorporate incomplete information. Furthermore, a version of the correspondence principle is given to refine the set of equilibria and guarantee unambiguous comparative statics results. Several examples are provided."