

Fuzzy subjective game considering non-additive feelings of players

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Abstract

In the field of non-cooperative game Nakai [3] proposes a subjective game to explain the variety in a strategy selection by a player. But in constructing a subjective game by a motive distribution, the expected payoff is calculated additively. In actuality the degree of satisfaction for a player is generally very subjective and non-additive. Therefore this paper proposes a fuzzy subjective game in which we represent the non-additive feelings of a player by a fuzzy measure and evaluate the expected payoff by the fuzzy integral.

Keywords : Non-cooperative game, non-additive feelings, fuzzy measure, fuzzy integral, subjective game.

1. Introduction

In the field of non-cooperative game Nash [4] proposes a concept of equilibrium which is called the Nash equilibrium today, which is used widely and deeply as an important analysis instrument in the micro-economics. But up to now it is indicated that the Nash equilibrium point (NEP) has the following two problems:

- (1) There are many non-cooperative games with plural NEPs. In these case the NEP is not a suitable guide for strategy selection by a player.

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