## Cooperative Games with Restrictions on Coalitions

## Tetsuzo Tanino

Abstract: Any coalitions are assumed to be feasible in ordinary cooperative games. This assumption, however, is not appropriate in several practical situations. Therefore, it is necessary to consider cooperative games with some restrictions on coalitions and those restrictions are usually described by set systems of feasible coalitions. Each set system is often called a feasible coalitions system (FCS) and corresponds to a binary function defined on the set of players. In this paper we generalize this concept FCS in two directions, i.e., extensions of the domain and the range. The first extension leads to fuzzy cooperative games with restrictions on coalitions and the second one to cooperative games with graded restrictions on coalitions. We analyze these two types of cooperative games and consider solutions for those games.