

综合报告会

Lecture

国家数学与交叉科学中心

Time: 14:00-15:00, November 22, 2013

Venue: 712, Siyuan Building

Time-consistent and Strategically Supported Cooperation in Dynamic Games



Speaker: Prof. Petrosyan Leon A.

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Abstract:

The problem of strategically supported cooperation in n -person differential games with integral payoffs is considered. Based on initial differential game the new associated differential game (CD-game) is designed. In addition to the initial game it models the players actions connected with transition from the strategic form of the game to cooperative with in advance chosen principle of optimality. The model provides possibility of refusal from cooperation at any time instant t for each player. As cooperative principle of optimality the Shapley value is considered. In the bases of CD-game construction lies the so-called imputation distribution procedure described earlier in (Petrosyan and Zenkevich, 2009). The theorem established by authors says that if at each instant of time along the conditionally optimal (cooperative) trajectory the future payments to each player according to the imputation distribution procedure exceed the maximal guaranteed value which this player can achieve in CD-game, then there exist a Nash equilibrium in the class of recursive strategies first introduced in (Chistyakov, 1981) supporting the cooperative trajectory.

Brief CV:

Leon Petrosjan is a professor of Applied Mathematics and the Head of the Department of Mathematical Game theory and Statistical Decision Theory at the St. Petersburg University, Russia. The research interests of Leon Petrosjan lie mostly in the fields of Operations Research, Game Theory, Differential Games, and Control Theory. Leon Petrosjan is the Editor of the journal International Game Theory Review; the Editor of the international periodical Game Theory and Applications; the Chief Editor of the Vestnik Peterburgskogo Universiteta, seria 10: Applied Mathematics, Control, Informatics; and the Chief Editor of the journal Mathematical Game Theory and Applications.