RANDOM EQUILIBRIA OF RANDOM GENERALIZED GAMES WITH APPLICATIONS TO NON-COMPACT RANDOM QUASI-VARIATIONAL INEQUALITIES

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Dedicated to Ky Fan

1. Introduction

In the last two decades, the classical Arrow and Debreu result [3] on the existence of Walrasian equilibria has been generalized in many directions. Mas-Colell [35] has first shown that the existence of an equilibrium can be established without assuming preferences to be total or transitive. Next, by using an existence theorem of maximal elements, Gale and Mas-Colell [20] gave a proof of the existence of a competitive equilibrium without ordered preferences. By using Kakutani's fixed point theorem, Shafer and Sonnenschein [43] proved a powerful result on the "Arrow and Debreu Lemma" for abstract economies in which preferences may not be total or transitive but have open graphs. Meanwhile, Borglin and Keiding [8] proved a new existence theorem for a compact abstract economy with KF-majorized preference correspondences. Following their ideas, there have been a number of generalizations of the existence of equilibria for compact abstract economies (see e.g. Aliprantis et al. [1], Border [7], Chang [11], Debreu [13], Ding et al. [15]–[16], Flam [18], Florenzano [19], Hildenbrand and Sonnenschein [25], Kajii [27], Keiding [28], Mehta and Tarafdar [37], Shafer [42], Khan and Yannelis [29], Mas-Colell and Zame [36], Tian [53], Tan and Yuan [48]–[49], Tarafdar [51], Tarafdar and Mehta [52], Tulcea [54]–[55] etc.). These

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