N-variable Fubini's Theorem for Young Measures and Iterated Lyapunov's Theorem

Mitsunori Noguchi

Department of Economics, Meijo University

Abstract

Recently, Askoura et al. (2013) and Noguchi (2014) obtained non-emptiness results for $\alpha-$cores of $n-$player cooperative games with asymmetric information. Both papers adopt Harsanyi's type description of private information and use Young measure techniques in an essential way but in quite different manners, along with Scarf's (1971) celebrated balancedness argument. Noguchi (2014) presented a partly sketchy proof of an iterated version of Lyapunov's theorem for Young measures, which plays a crucial role in the proof of his main theorem. The aim of this paper is to provide a rigorous mathematical proof of the aforementioned theorem, where the proof relies only on well-known elementary facts about abstract Lebesgue integral.