
장이채 김태균
Konkuk University

On fuzzy number-valued Choquet
integrals

AM-11

We studied closed set-valued Choquet integrals in two papers(1997, 2000) and convergence theorems under some sufficient conditions in two papers(2003), for examples ; (i) convergence theorems for monotone convergent sequences of Choquet integrably bounded closed set-valued functions, (ii) convergence theorems for the upper limit and the lower limit of a sequence of Choquet integrably bounded closed set-valued functions. In this presentation, we consider fuzzy number-valued functions and define Choquet integrals of fuzzy number-valued functions. But these concepts of fuzzy number-valued Choquet integrals are all based on the corresponding results of interval-valued Choquet integrals. We also discuss their properties which are positively homogeneous and monotonicity of fuzzy number-valued Choquet integrals. Furthermore, we will prove convergence theorems for fuzzy number-valued Choquet integrals. They will be used in the following applications : (1) Subjectively probability and expectation utility without additivity associated with fuzzy events as in Choquet integrable fuzzy number-valued functions, (2) Capacity measure which are presented by comonotonically additive fuzzy number-valued functionals, and (3) Ambiguity measure related with fuzzy number-valued fuzzy inference.
