Abstract

In this work we studied some problems related with uncertain measure, this kind of measure is the first basic idea for uncertain theory which found in (2007) and refined in (2010) by Prof. B. Liu , and also introduced some of the new properties for uncertain conditional expectation , in addition we introduced the concept of uncertain martingale which defined under this kind of expectation and we gave some of the applications on this kind of martingale like (Upcrossing Inequality) and (Doop decomposition)

We'll recall some of the results that we gained from this work :

1. (First Borel- Cantelli Lemma) is achieve on uncertain measure.

2. If X be an uncertain variable on (Ω, F, μ). Define $\mu_x : \beta(R) \to R$ by $\mu_x(A) = \mu\{X^{-1}(A)\}$ for all $A \in \beta(R)$. Then μ_x is an uncertain measure is called the uncertain measure induced by X .

3. We proved (Radon-Nikodym theorem) on uncertain measure.

4. We proved (Doop Decomposition) and (Upcrossing Inquality) on uncertain conditional expectation .