SNELL’S OPTIMIZATION PROBLEM FOR SEQUENCES OF CONVEX COMPACT VALUED RANDOM SETS

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Abstract: A random set analogue of the Snell problem is presented. In the original Snell’s problem one observes a sequence of random variables \((\xi_n)\), say a gambler’s capital at successive games. If the gambler leaves the game at a random time \(\nu\), his expected capital at this time is \(E\xi_{\nu}\). The objective is to stop at time \(\nu\) (using information available up to this moment) such that the expected gambler’s fortune \(E\xi_{\nu}\), is maximal.

Here a multivalued analogue of this problem will be studied. Given a Banach space and a sequence of convex weakly or strongly compact valued random sets \((Z_n)\) in that space, the existence of a stopping time \(\nu\) such that \(EZ_\nu\) is maximal is investigated.

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