Distributions of stopping times for Compound Poisson processes and non-linear boundaries

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ABSTRACT

Distributions of the first-exit times from a region with concave upper boundary are discussed for ordinary and compound Poisson processes. Explicit formulae are developed for the case of ordinary Poisson processes. Recursive formulae are given for the compound Poisson case, where the jumps are positive, having discrete or continuous distributions with finite means. Applications to sequential point estimation and insurance are illustrated.