

Towards extending the W, Z paradigm for first passage problems of Lévy processes to strong Markov processes with one sided jumps

Florin Avram,

SUMMARY

The ‘paradigm’ alluded in the title is a conjecture, which states that the W, Z formulas [1] for the first passage problems of Lévy processes with one sided jumps apply equally to strong Markov processes with one sided jumps. It has been largely established already for Markov additive processes [5], for Lévy processes with Ω state dependent killing [7] and for random walks [3]. Recent works of [6], [4], [2] show it may apply to strong Markov processes with general draw-down stopping (which generalizes classic and draw-down /trailing stop). Applications involving exit and optimizing dividends will be presented.

Keywords: exit problem, spectrally one sided process, draw-down process, scale functions, dividends

AMS Classification: 60H10, 60J80, 60J25

References

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¹Department de Mathématique
Université de Pau
email: florin.avram@orange.fr