

Old and new examples of scale functions for spectrally negative Lévy processes and applications

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We give a review of the state of the art with regard to the theory of scale functions for spectrally negative Lévy processes. From this we introduce a general method for generating new families of scale functions. Using this method we introduce a new family of scale functions belonging to the *Gaussian Tempered Stable Convolution* (GTSC) class. We give particular emphasis to special cases as well as cross-referencing their analytical behaviour against known general considerations.