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The occupation times for spectrally negative Lévy process

This talk in on the Laplace transforms of the occupation times for a spectrally negative Lévy process. For Brownian motion such a result can be obtained by the Feynman-Kac representation and solving a differential equation. We want to introduce a different approach using the solutions to exit problems for the Lévy process. We are going to show that these Laplace transforms could be eventually expressed in terms of the Laplace exponent and the scale function for the corresponding Lévy process.

This talk is based on joint work with David Landriault, Ronnie Loeffen and Jean-Francois Renaud.