Mathematics > Probability

Exit times in non-Markovian drifting continuous-time random walk processes

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(Submitted on 2 Feb 2010)

By appealing to renewal theory we determine the equations that the mean exit time of a continuous-time random walk with drift satisfies both when the present coincides with a jump instant or when it does not. Particular attention is paid to the corrections ensuing from the non-Markovian nature of the process. We show that when drift and jumps have the same sign the relevant integral equations can be solved in closed form. The case when holding times have the classical Erlang distribution is considered in detail.

Comments: 8 pages, 3 color plots, two-column revtex 4
Subjects: **Probability (math.PR)**; Statistical Finance (q-fin.ST)
Cite as: **arXiv:1002.0571v1 [math.PR]**

Submission history

From: Miquel Montero [view email]
[v1] Tue, 2 Feb 2010 20:21:16 GMT (169kb)

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