Solved Problems

Random incidence under Erlang arrivals. Consider an arrival process in which the interarrival times are independent Erlang random variables or order 2, with mean $2/\lambda$. Assume that the arrival process has been ongoing for a very long time. An external observer arrives at a given time t. Find the PDF of the length of the interarrival interval that contains t.

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Erlang process

interarrival Time ~ Erlang $(k=2, \lambda)$

$+ \quad T$ (observed time) $\bigg] = $ sum of 3 ~ Erlang $(k=$

Poisson process

exp exp

memoryless $\quad$ exp $\quad$ exp (Erlang $(k=1, \lambda)$)