

THE EXPONENTIAL MOMENT TAIL OF INHOMOGENEOUS RENEWAL PROCESS

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Abstract. Let $\theta_1, \theta_2, \dots$ be a sequence of nonnegative not necessarily identically distributed and independent random variables having finite means and satisfying some additional conditions. I consider the asymptotic behavior of the quantity $E(b^{\Theta(t)} 1_{\Theta(t) > at})$, where a and b are suitable positive constants and $\Theta(t)$ is an inhomogeneous renewal process generated by the sequence $\theta_1, \theta_2, \dots$.

I also present a few corollaries concerning elementary renewal theorems for the above process.

Keywords: inhomogeneous renewal process, exponential estimate, renewal theorem