Asymptotic Expansions in Multivariate Renewal Theory

Robert W. Keener

Let P be a probability measure on $\mathbb{R}^{m+1}$, and $R = \sum_{n=0}^{\infty} P^{*n}$ the associated renewal measure. A two term asymptotic expansion for R is derived under moment and smoothness conditions. The smoothness conditions imposed allow P to be arithmetic in some coordinates and absolutely continuous in the other coordinates.