

Asymptotic Expansions for Moments of Skew normal Extremes

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Skew normal distribution, an extension of normal distribution, has been widely used in applied statistics, engineer, meteorology and financial time series modeling. We have considered the Mills type inequalities and the Mills type ratios of skew normal distribution which applies to establish the asymptotic expansions of distributions of extremes. In this short note, we focus on the limiting behaviors of moments for normalized partial maxima of skew normal samples. Under optimal norming constants, asymptotic expansions for moments of maxima of skew normal samples are derived. These expansions are used to deduce convergence rates of moments of the normalized maxima to the moments of the corresponding extreme value distribution.

Key Words: Extreme value distribution, maximum, rate of convergence, skew normal distribution