Some limits theorems for lifetime's distributions and their applications in Network's Reliability

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In this paper it was presented limits theorems for lifetime distributions as a limits of distributions of random variables $\min(X_1, X_2, ..., X_n)$ and $\max(X_1, X_2, ..., X_n)$, where $X_1, X_2, ..., X_n$ are independent identically distributed random variables such that $X_k = X_{k1} + X_{k2} + ...X_{kN}$, X_{k1}, X_{k2}, ..., X_{kN} are nonnegative independent identically distributed random variables and N is a

Pascal distributed random variable independent of random variables X_{k1}, X_{k2}, ... We connect this results with some mathematical models in Network's Reliability and show their effectiveness to approximate and simplify research of reliability characteristics of different types of Networks.
Key words: lifetime distributions, Pascal's distribution, Limits Theorem, series and parallel network systems, reliability.