PRESERVATION PROPERTIES OF STOCHASTIC ORDERS BY TRANSFORMATION TO HARRIS FAMILY

Somayeh Abbasi
Mohammad Hossein Alamatsaz

Abstract: Stochastic comparisons of lifetime characteristics of reliability systems and their components are of common use in lifetime analysis. In this paper, using Harris family distributions, we compare lifetimes of two series systems with random number of components, with respect to several types of stochastic orders. Our results happen to enfold several previous findings in this connection. We shall also show that several stochastic orders and ageing characteristics, such as IHRA, DHRA, NBU, and NWU, are inherited by transformation to Harris family. Finally, some refinements are made concerning related existing results in the literature.

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