

Navarro, J.; Ruiz, Jose M.; Sandoval, Carlos J.

Properties of coherent systems with dependent components. (English) Zbl 1121.60015
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A random variable T associated with a random vector $X = (X_1, \dots, X_n)$ is introduced, which in case that X represents the lifetimes of the n components of a coherent system, turns out to be the system lifetime. The distribution of T is called hyperminimal or hypermaximal distribution by the authors and some properties as bounds and moments are developed. Moreover, minimal and maximal signatures of coherent systems with exchangeable components are introduced and calculated for systems with three and four components. Finally, the results are illustrated by means of an exponential coherent systems.

Reviewer: Elart von Collani (Würzburg)

MSC:

60E15 Inequalities; stochastic orderings
60K10 Applications of renewal theory (reliability, demand theory, etc.)
90B25 Reliability, availability, maintenance, inspection in operations research

Cited in **83** Documents

Keywords:

generalized mixture; order statistics; reliability bounds

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