MODELLING RELIABILITY OF SERIAL-PARALLEL AND PARALLEL-SERIAL NETWORKS WITH CONSTANT NUMBERS OF SUBNETWORKS AND UNITS.

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Abstract. On the basis of dynamic mathematical models, a comparative analysis of the reliability of two types of networks (serial-parallel and parallel-serial) is performed in our paper. Cases are analyzed when the numbers of sub-networks and units each sub-network are constants, but also when the lifetimes of all units are independent, identically distributed random variables (i.i.d.r.v.). The formulas for calculating the reliability of the related networks are deduced. The invoked examples show us that Reliability of Serial-Parallel Networks versus Parallel-Serial Networks depends only of number of the sub-networks and number of units in the sub-networks.

Keywords: *lifetime distributions, survival functions, serial-parallel and parallel-serial networks.*

References

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