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Stress-strength reliability: a quantile approach. (English) Zbl 07491700
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Summary: In reliability modelling and analysis of systems, quantile functions play a significant role when
the distribution function under consideration does not possess an analytically tractable form, though
the corresponding quantile function has an explicit form. In the present paper, we propose a quantile-
based approach for stress-strength reliability of a system. We also introduce the quantile versions of
stress-strength reliability for residual lifetime random variables. The effect of monotone transformations
and some characterizations of the proposed measures are discussed. The reliability of multi-component
stress-strength systems based on quantiles is also considered.

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stress-strength reliability; quantile functions; distribution functions; multi-component systems

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