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Review Article

Life-cycle reliability-based optimization of civil and aerospace structures

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Abstract

Today, it is widely recognized that optimization methodologies should account for the stochastic nature of engineering systems and that concepts and methods of life-cycle engineering should be used to obtain a cost-effective design during a specified time horizon. The recent developments in life-cycle engineering of civil and aerospace structures based on system reliability, time-dependent reliability, life-cycle maintenance, life-cycle cost and optimization constitute an important progress. The objective of this study is to present a brief review of the life-cycle reliability-based optimization field with emphasis on civil and aerospace structures.



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Keywords

Life-cycle engineering; Optimization; Life-cycle cost; Structural systems; Simulation; Structures; Aerospace structures; Civil structures; Maintenance; Reliability-based design; System reliability

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