

ROBUSTNESS OF SYSTEMS- KNOWLEDGE AND UNCERTAINTY

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Abstract: Structural robustness is a term recently adopted by the literature in order to frame all the actions that a designer should take in addition to a safety analysis. The lifecycle scenarios may include extreme situations whose damaging consequences can be limited at no extra-cost by a suitable conception of the structural system. It must be a problem to introducing structural robustness in reliability – oriented optimal design, where one simultaneously pursues the minimization of the cost and an adequate structural performance. This should be evaluated in terms of both reliability and robustness.

A general definition of robustness (not only structural) must be valid for any system.

It is necessary to make a clear distinction between the robustness of structure (depends of execution, maintenance and the effects of deterioration) which represents an intrinsic property of structures and the robustness of a system involving the structure.

Key words: safety, robustness, risk, consequences