

Review Book

Reliability and optimization of structural systems, by M. Maes and L. Huyse, eds, A.A. Balkema Publishers, Taylor & Francis Group plc, ISBN 90-5809-5797, 2004

This book is a collection of the papers presented at the conference. Those who deal with reliability and optimization will find this book extremely useful and informative.

But first I would like to tell you that recently, participating at the ICROSSAR'05 I had a chance to hear an opinion stating that the notion of optimization is a fallacy because of uncertainty. This book is a living proof to the contrary. One has to look for best solutions even when uncertainties are involved, and where don't they occur?! Keynote lectures by J.O. Royset, A. Der Kiureghian and E. Polak ("Reliability Based Optimal Design: Problem Formulation, Algorithms and Application") and by J.S. Nathwani ("Strategic Principles for Managing Risk"). The former stresses that "uncertainties and optimization are two major considerations in structural design." This combination suggests development of coherent framework, development of social indicators, using Life Quality Index as a tool for managing risk, and better allocation of society's resources.

This writer particularly enjoyed reading papers by S.R. Reid "Uncertain Probability Estimates and an Entropy-Based Measure of Uncertainty"; M.A. Maes and M.H. Faber "Issues in Utility Modeling and Rational Decision Making", by Furuta H. and Nakatsu K., "Optimal Restoration Scheduling for Earthquake Disaster by Emergent Computing", by Sudret B., Berveiller M. and Lemaire M., "Application of a Stochastic FE Procedure to Reliability Analysis" and by Nishijima K. and Kanda J., "A Risk Management Approach for the Design of Building a Portfolio." Other papers too are shedding light to various important aspects.

This is undoubtedly an important book that ought to be on the bookshelf of engineers and scientists dealing with reliability and/or optimization.

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