

1. Record Nr.	UNINA9910346712303321
Autore	Bertsch Valentin
Titolo	Uncertainty handling in multi-attribute decision support for industrial risk management
Pubbl/distr/stampa	KIT Scientific Publishing, 2008
ISBN	1000007378
Descrizione fisica	1 electronic resource (X, 202 p. p.)
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Sommario/riassunto	<p>The complexity of today's industrial production networks constitutes a new challenge for industrial risk and safety management. In order to handle potential risks to and emanating from industry and their respective impact on mankind as well as the environment, an integrated approach to industrial risk management is needed, since complex decision situations need to be resolved requiring input from diverse scientific disciplines and the consideration of various often conflicting criteria. Providing the basis for the evaluation of such conflicting criteria and for bringing together existing knowledge from different disciplines, approaches from Multi-Criteria Decision Analysis (MCDA) can be very helpful to resolve the complexity of the occurring decision situations. In order to address the various types of uncertainty, which may arise in a decision making process in industrial risk management, a framework for uncertainty handling is proposed. On the basis of a structured uncertainty classification, methods based on Monte Carlo simulation can be used for a consistent modelling, propagation and visualisation of the different types of uncertainty. Special focus is put on approaches that allow to explicitly illustrate the spread, i.e. the ranges in which the Multi-Attribute Decision Making (MADM) results can vary in consequence of the uncertainties.</p>