

Risk management in civil engineering

advanced course

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RISK MANAGEMENT

An overview

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Abstract

Safety, reliability and risk are key issues in our increasingly complex society. Severe and less severe accidents leave us aware of the vulnerability of our technical and natural environment and ask for an adequate engineering response.

That is, risk and uncertainty are fundamental elements of modern life. They are ever present in human actions and are often magnified by the technological world. Consequently, they must be managed efficiently in order to protect people from injury and to permit the development of reliable high quality tools and procedures.

The importance of the theme is confirmed by the fact that in our days, risk-based decision-making is adopted by an ever increasing number of professionals and managers.

When dealing with several risks, in risk assessment, there are three main questions we want to answer: What can go wrong? What is the likelihood that it can go wrong? What are the consequences? Answers to these questions help risk analysis to identify and to evaluate risks and their consequences and impacts.

From a global point of view, to be effective, risk management must be an integral part of the overall management of a system.

This presentation describes some examples of different types of civil engineering activities, which are relevant for an adequate response when solving problems related with natural and technological risks.

Concepts, formulation, risk identification, risk analysis and risk management are also presented, as well as some aspects that must be considered in a scientific approach to risk assessment in civil engineering, setting new methodologies that can be adopted in policy-making.