

NEW FRAMEWORK FOR INFRASTRUCTURE RISK MANAGEMENT AFFECTED BY EXTREME NATURAL EVENTS

Sérgio Fernandes

Department of Civil Engineering
University of Minho (Portugal)
sfernandes@civil.uminho.pt

José Campos e Matos

Department of Civil Engineering
University of Minho (Portugal)
jmatos@civil.uminho.pt

Mário Coelho

Department of Civil Engineering
University of Minho (Portugal)
mcoelho@civil.uminho.pt

ABSTRACT

The present presentation aims at showing an overview of the project Strengthening Infrastructure Risk Management in the Atlantic Area (SIRMA). In fact, most of the transportation of people and goods in this region is made through rail and road infrastructures. Their performance is directly affected by extreme natural events and by the strong corrosion processes that result from proximity to the Atlantic Ocean.

SIRMA project aims to develop a robust framework for the management and mitigation of such risks, by implementing immediate, medium and long-term measures, and therefore to increase the resilience of transportation infrastructure. The project core is on long-term recovery and risk mitigation to reduce maintenance and retrofitting costs. This objective will be obtained by adjusting existing deterministic models of infrastructure resilience under the current climate, with probabilistic models considering the uncertainties of future climate and change on the land use and how it affects hazard impact on individual mode components. Thus, probabilistic models will allow for a better adaptation of infrastructure to climate change and consider the uncertainties to develop adequate predictive policies and planning tools to reduce risks of hazards.

Keywords: Risk management, climate change, decision making, extreme natural events.