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KEYNOTE LECTURE – RISK-BASED OPTIMUM LIFE-CYCLE MANAGEMENT OF CIVIL INFRASTRUCTURE UNDER CLIMATE CHANGE EFFECTS

Recently, climate change has been found to be liable for the increasing vulnerability of civil infrastructure systems, such as buildings and bridges, due to several factors including the intensification of extreme hydrologic events (e.g., floods, sea level rise, and hurricanes). With the limited financial resources for infrastructure management and the growing risk compounded by climate change, effective risk-informed life-cycle management of civil infrastructure under climate change effects is imperative. In this keynote paper, a risk-based optimum life-cycle management framework for civil infrastructure systems considering climate change effects is presented. The proposed framework is demonstrated on several case studies.

Keywords: risk; climate change; cost; life-cycle; management; optimization; decision making; infrastructure.

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