

# Evaluation of Concrete Deterioration through Artificial Neural Networks based Systems

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**Abstract**—The deterioration of concrete structures is one of the major concerns of our society. Indeed, concrete is a relatively sensitive material, which degrades throughout time. Factors like age, use, periodic maintenance, type of environmental exposure and aggression by biological, chemical, mechanical and physical agents are important to determine the level of degradation of the concrete structures. Logic Programming was used for knowledge representation and reasoning, letting the modeling of the universe of discourse in terms of defective data, information and knowledge. Artificial Neural Networks were used in order to evaluate the deterioration of concrete structures and the degree of confidence that one has on such a happening.

**Keywords**—Artificial Neuronal Networks, Concrete Degradation, Knowledge Representation and Reasoning, Logic Programming.

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