

# PHYSICAL MODELING OF CONCRETE BRIDGES SUBJECTED TO EARTHQUAKES

Saiidi, M. S.

**Abstract:** Strong earthquakes of the past four decades have revealed the need for a better understanding of the seismic behavior of bridge elements and systems. Towards this goal experimental and analytical studies have been conducted and have evolved as more field data have become available, computing tools have developed, and experimental research facilities have expanded. Different aspects and examples of component and system testing related to new and damaged bridges are discussed. Lessons learned from the more recent bridge system studies are summarized. The need to restore service is addressed by rapid repair methods that are being developed. The article also presents a brief discussion of the utilization of innovative materials such as shape memory alloys to improve the seismic performance and serviceability of bridges after strong earthquakes and efforts in minimizing traffic interruption by the use of accelerated bridge construction.

**Key words:** Physical Modeling, Concrete Bridges, Earthquakes.



**Authors' data:** Prof. Saiidi, M. S. [aiid], Ph. D., Fellow ACI, ASCE; Foundation Professor, University of Nevada at Reno (UNR), Reno, Nevada, USA.