**DETERMINATION OF DYNAMIC PROPERTIES OF BOWSTRING R/C BRIDGES BY USING AMBIENT VIBRATION MEASUREMENTS**

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**ABSTRACT**

Ambient vibration measurement technique is non-destructive and easily applicable method in order to determine the dynamic characteristics of the structures. The aim of the research is to determine the dynamic properties of the existing bridges. Two different bowstring type historical concrete bridge is investigated. The First bridge which is namely Kavuncu Bridge is constructed as a single span bridge with 30m span length and 7.0 m width in 1945, and the second one is which is namely Ali Çetinkaya Bridge is constructed as seven span bridge with 35 m span length and 6.2 m width in 1937. The dynamic response parameters such as the natural frequencies, damping ratios and mode shapes are extracted from the ambient vibration records. Finite element models of the bridges are generated. The ambient vibration measurement and numerical model results are compared.

*Keywords: Structural health monitoring, ambient vibration test, existing concrete bridge*

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