

Auxiliary tendon to control the bridge vibration

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Abstrak

ABSTRACT

Construction technology has led to flexible structures such as tall buildings and long-span bridges the design of these structures involves certain problem, e.g. : safety, human comfort, increased risk of damage.

A solution to these problems consist to certain extent of the application of structural control.

A structure can be controlled by using active control mechanisms, it is able to control displacement, velocity or acceleration of the structure, or all of these, as desired.

In order to control the structure s response, one has to apply some control forces that are able to change the parameter affecting the response (mass, stiffness, damping) properly. Such forces can easily be implemented by using auxiliary masses, springs (or tendons), dampers, or all of these.

Furthermore, in this paper, tendon control will be used to provide the control force for a simple span bridge and this evaluation ins limited to the controlled response of deflection at midspan and compare with uncontrolled response.