

## عنوان مقاله:

In-plane Response of a Three-span Simply Supported Bridge to Near-fault Strong Ground Motion

## محل انتشار:

هشتمین کنگره ملی مهندسی عمران (سال: 1393)

تعداد صفحات اصل مقاله: 8

## نویسندگان:

Milad Veisi - MS Student, Dept. of Civil Eng., Faculty of Eng., University of Guilan, Rasht, Iran

Reza Saleh Jalali - Assistant Professor, Dept. of Civil Eng., Faculty of Eng., University of Guilan, Rasht, Iran

## خلاصه مقاله:

In this paper a simple model of a three-span simply supported bridge excited by the horizontal component of fault-normal pulse with different magnitudes and time lags has been considered. In the considered model the axially rigid mass-less piers are connected at the top to the rigid decks by hinges and at the bottom to the ground by linear rotational springs and dashpots. For determination of the pounding force between decks, the linear viscoelastic model has been chosen. It is assumed that the bridge is near the fault and the excitations at all piers have the same amplitude but differ in terms of phase. The system of equations of motion has been solved by the fourth-order Runge-Kutta method because of its self-starting feature and the long-range stability. For a range of main period of the bridge, the maximum impact force between decks and the minimum gap size required to avoid collision can be determined under fault-normal pulse with different magnitudes and time lags. It could be concluded from the results that time lag plays a very important role in determining maximum impact force and it's better to use softer piers to reduce the maximum impact force and the minimum gap size required to avoid collision between decks.

## کلمات کلیدی:

Pounding, near-fault ground motion, simply-supported bridge, wave-passage

## لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/296360>

