عنوان فارسی مقاله:
ارزیابی عملکرد پل بتنی تحت شوک لرزه ای متوسط با استفاده از مدل پلاستیسیته آسیب بتن

عنوان انگلیسی مقاله:
Assessment of Concrete Bridge Performance under Moderate Seismic Shock Using Concrete Damage Plasticity Model

توجه!
این فایل تنها قسمتی از ترجمه میباشد. برای تهیه مقاله ترجمه شده کامل با فرمت ورد (قابل ویرایش) همراه با نسخه انگلیسی مقاله، اینجا کلیک نمایید.
6. Conclusions

In the paper the results of calculations of the dynamic responses of the concrete bridge to the moderate seismic shock were presented and assessed. To represent inelastic behaviour of the bridge the concrete damage plasticity model was assumed. The model allowed to describe the irreversible tensile damage that occurred during the dynamic loading. In summary, the following conclusions as well as some general remarks for engineering practice can be formulated:

- The appropriate and realistic representation of the concrete material is essential for the assessment of dynamic performance of bridges located in moderate seismicity zones.
- It is proved by the results of the nonlinear dynamic analysis that even moderate seismic phenomenon could result in tensile damage and stiffness degradation of the concrete bridge deck, especially if the natural frequencies of the bridge fall into the range of the dominant frequencies of the shock.
- The seismic resilience of the bridge decreased after the moderate seismic shock as a result of tensile damage and stiffness degradation.

This conclusion may be of a special importance also in case of mining tremors which occur in mining activity areas and which resemble the mechanism of moderate earthquakes. Considering the high repeatability of mining tremors the concrete material may be gradually degraded during the time of exploitation of the bridge.