



## **SIMULATION OF CENTRAL ITALY EARTHQUAKE USING ARTIFICIAL SPECTRUM-COMPATIBLE GROUND MOTIONS**

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### ***Abstract***

A validation of spectrum-compatible artificial ground motions using the data of 2016 central Italian earthquake is proposed. Three distinct models are involved: two stochastic models based on wavelet packets and seismological models plus a modified power spectral density based method. The recent Italian earthquake sequence is analyzed by developing the real spectra and comparing them with: (i) the Design Spectrum, (ii) the Predicted Mean Spectrum and (iii) the Conditional Mean Spectrum evaluated in the region affected by 2016 earthquake sequence. The optimal parameters of the three method are obtained through fitting with real spectral data. The results are obtained to generate spectrum-compatible artificial time-histories that are processed and compared with the real time-histories at the site.

*Keywords: stochastic models, conditional mean spectrum, spectrum-compatible ground motions*