

## Study on Seismic Assessment of Earthquake-Damaged Reinforced Concrete Buildings

**Authors :** Fu-Pei Hsiao, Fung-Chung Tu, Chien-Kuo Chiu

**Abstract :** In this work, to develop a method for detailed assesses of post-earthquake seismic performance for RC buildings in Taiwan, experimental data for several column specimens with various failure modes (flexural failure, flexural-shear failure, and shear failure) are used to derive reduction factors of seismic capacity for specified damage states. According to the damage states of RC columns and their corresponding seismic reduction factors suggested by experimental data, this work applies the detailed seismic performance assessment method to identify the seismic capacity of earthquake-damaged RC buildings. Additionally, a post-earthquake emergent assessment procedure is proposed that can provide the data needed for decision about earthquake-damaged buildings in a region with high seismic hazard. Finally, three actual earthquake-damaged school buildings in Taiwan are used as a case study to demonstrate application of the proposed assessment method.

**Keywords :** seismic assessment, seismic reduction factor, residual seismic ratio, post-earthquake, reinforced concrete, building

**Conference Title :** ICUEES 2016 : International Conference on Urban Earthquake Engineering and Seismology

**Conference Location :** Tokyo, Japan

**Conference Dates :** May 26-27, 2016