17th Symposium on Earthquake Engineering
November 14-17, 2022
IIT Roorkee, India
Paper No. 418

Early Warning System: An Efficient Earthquake Disaster Mitigation Tool

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Abstract

The earthquake risk mitigation goals are achieved by applying a number of approaches to reduce the vulnerability of the built environment. The most widely known long-term risk mitigation approaches are earthquake-resistant design and construction, reviewing building use regulations and codes, and retrofitting of the existing vulnerable infrastructure. Construction experts, earthquake and civil engineers must emphasize on structural and non-structural elements to avoid potential damages and human loss. Accurate predictions of earthquakes would effectively reduce the damage caused by earthquakes. Unfortunately, seismic stress buildup inside the earth's crust and its release starting from the nucleation to the end of the rupture, is a complex phenomenon. Therefore, making accurate predictions of earthquakes is quite tricky. Revolution in digital seismology, telecommunication, and high-performance computing has provided strong support for risk mitigation measures in the last four decades. The recent advancement in real-time processing and transmission of seismic data has enabled the evolution of a real-time risk mitigation system like an earthquake early warning system (EEWS). The EEWS is a real-time system for earthquake risk reduction.

Keywords: Earthquake, Early warning system, Lead-time, Risk mitigation