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Editorial

Foreword to: Prospects and applications of Earthquake Early Warning for real-time earthquake engineering, risk management and loss mitigation

The special volume of *Soil Dynamics and Earthquake Engineering* (SDEE) entitled *Prospects and Applications of Earthquake Early Warning for Real-Time Earthquake Engineering, Risk Management and Loss Mitigation* was edited with the intention to collect an overview of current scientific and technological progress, as well as the critical issues, about real-time seismic risk management tools, also known as *Earthquake Early Warning systems* (EEWs). In fact, EEWs are emerging as moderately costly solutions for risk mitigation, whose attractiveness is related to the reduction of the total losses produced in a large urbanized region or for the protection of critical facilities in those cases where traditional strengthening strategies are either too expensive or not sufficiently effective.

EEW is founded on the grounds of *Real-Time Seismology* (RTS) and mainly relies on the possibility of developing effective risk reduction while an earthquake is developing in the epicentral area and its damaging phase has not reached the exposed sites yet.

A great deal of research has recently focused on EEW and several steady applications or prototypal EEW systems are currently operating in some of the most seismically prone areas in the world. However, while there is a significant amount of literature about the seismological aspect of early warning, very few reports address appliances of EEW and their feasibility. Therefore, we believed there is a need to picture the bulk of most important experiences and research findings pointing to perspective applications. Because this is jointly related to both earthquake engineering and engineering seismology, we think SDEE is particularly appropriate.

The issue features 16 scientific papers, belonging to four categories, authored by both academic and experts operating EEWs. Some studies intend to frame the current approaches to seismological, engineering and loss assessment aspects of EEW; i.e., [1–3]. Papers [4–12] effectively report on ongoing, or developing, systems at global level. Investigations presented in [13–15] discuss a few, yet promising, structure-specific engineering applications of real-time informative earthquake alert. Finally, [16] gives a vision of current and future needs for EEW.

After reading this issue, it may be certainly said that EEW is a *reality* nowadays, and not a concept anymore, to an extent which surprised even the editors. More important are the possibilities emerging from such current knowledge.

In closing this brief foreword, we want to thank all the contributors for their valuable effort and all the reviewers for substantially aiding in editing this special issue of SDEE.

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