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REAL-TIME EARTHQUAKE DAMAGE ASSESSMENT AND GIS ANALYSIS OF TWO VULNERABLE COUNTIES IN THE VRANCEA SEISMIC AREA, ROMANIA

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Abstract

In the last years, thanks to the implementation of the ShakeMap software in real-time at the National Institute for Earth Physics (NIEP) and within the DACEA Project, a system that computes damage and loss estimates in (near) real-time for the Romanian-Bulgarian border region was installed at NIEP, producing data and maps for 7 Romanian Counties and 9 Bulgarian Districts.

This paper presents both the integration mode and the results obtained by adding new counties into the implemented system, and also presents best ways for a GIS representation of the estimated damage. Of great interest is that the new counties – Vrancea and Bacau, are right on top of the active seismic area of Vrancea, compared to the previous analyzed counties that are more than 100 km away from the epicentral area.

There are many practical sides of the paper: based on past events it is illustrated how the damage might look like nowadays in a very exposed area and what are the risks to be dealt with, raising questions about new mitigating actions. Also, the certain accuracy of the loss assessment is validated, so that the new counties can be included in the real-time damage estimation system at NIEP.

Key words: seismic loss estimation, Selena, Vrancea

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