
Science - Earth Science; New Earth Science Study Results Reported from University of Texas (Ground Motion Model for Small-to-Moderate Earthquakes in Texas, Oklahoma, and Kansas)

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2019 FEB 22 (NewsRx) -- By a News Reporter-Staff News Editor at Science Letter -- Current study results on Science - Earth Science have been published. According to news originating from Austin, Texas, by NewsRx correspondents, research stated, "A ground motion model (GMM) tuned to the characteristics of the observed, and potentially induced, seismicity in Texas, Oklahoma, and Kansas is developed using a database of 4,528 ground motions recorded during 376 events of M-w > 3.0 in the region. The GMM is derived using the referenced empirical approach with an existing Central and Eastern North America model as the reference GMM and is applicable for M-w = 3.0-5.8 and hypocentral distances less than 500 km."

Financial support for this research came from State of Texas through the TexNet Seismic Monitoring Project from the Industrial Associates of the Center for Integrated Seismic Research (CISR) at the **Bureau of Economic Geology** of the University of Texas.

Our news journalists obtained a quote from the research from the University of Texas, "The proposed model incorporates weaker magnitude scaling than the reference GMM for periods less than about 1.0 s, resulting in smaller predicted ground motions at larger magnitudes. The proposed model predicts larger response spectral accelerations at short hypocentral distances (≤ 20 km), which is likely because of the shallow hypocenters of events in Texas, Oklahoma, and Kansas. Finally, the V-S30 scaling for the newly developed model predicts less amplification at V-S30 < 600 m/s than the reference GMM, which is likely because of the generally thinner sediments in the study area."

According to the news editors, the research concluded: "This finding is consistent with recent studies regarding site amplification in Central and Eastern North America."

For more information on this research see: Ground Motion Model for Small-to-Moderate Earthquakes in Texas, Oklahoma, and Kansas. Earthquake Spectra, 2019;35(1):1-20. Earthquake Spectra can be contacted at: Earthquake Engineering Research Inst, 499 14TH St, Ste 320, Oakland, CA 94612-1934, USA.

The news correspondents report that additional information may be obtained from E.M. Rathje, Univ Texas Austin, Dept. of Civil Architectural & Environm Engn, Austin, TX 78712, United States.

The direct object identifier (DOI) for that additional information is: <https://doi.org/10.1193/022618eqs047m>. This DOI is a link to an online electronic document that is either free or for purchase, and can be your direct source for a journal article and its citation.

Keywords for this news article include: Austin, Texas, United States, North and Central America, Earth Science, Science, University of Texas.

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