

DBT-AIST International Laboratory for Advanced Biomedicine DAILAB

Classroom for Advanced & Frontier Education CAFE

Series - 59

Date & Time: March 12, 2021 (15:30-16:30 JST)

Speaker: Mahendra Kumar Pal

Affiliation: Associate Research Fellow, Earthquake Disaster Mitigation Research Division
National Research Institute for Earth Science and Disaster Resilience, Japan.

E-mail: pal.mahendra.jp@gmail.com



Understanding the seismic resilience of building and civil structures using high-performance computing

Our institute has been engaged in research work to increase the level of science and technology for disaster risk reduction. Earthquake Disaster Mitigation Research Division of the institute has been focused on full-scale testing of structures against catastrophic earthquakes to have a comprehensive understanding of their seismic responses.

Alongside experimental study, the institute is also developing a numerical tool based on High-Performance Computing called E-Simulator to facilitate numerical studies. E-Simulator aims to reproduce the damage mechanism of civil structures exposed to any sort of strong ground motions. Sophisticated constitutive models and failure criteria for various materials such as concrete, steel, and rubber, with the appropriate mathematical framework, are included in the tool. It is noteworthy to mention that every crucial stage involved in the large-scale simulation is verified and validated with experimental data.

In this talk, I would like to briefly introduce the capabilities of E-Simulator by demonstrating the few simulations of namely composite beam (i.e., steel beam with concrete slab)-to-column T-joint, self-underground structure specimen,



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S sharath (Guest)

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M Mallikarjuna (Guest)

D DEBYANI (Guest)

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LIXiaoshuai

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MT manju thomas (Guest)

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41 Participants !

Thank you !

Gorkha Earthquake, 2015