



## About IIT Hyderabad

Indian Institute of Technology Hyderabad, with its fast-paced growth in quality research and teaching, has emerged as one of the top 10 engineering institutes in India in the QS-2021 World Rankings. By prioritizing highly futuristic and novel areas like climate change and AI, IITH has the early movers' advantage of becoming a trendsetter in various other areas as well. We are also in an advantageous position of becoming a pedestal of interdisciplinary research and teaching by synergizing the strengths of our faculty in science, engineering, liberal arts, management & design. IIT Hyderabad is one of the 2<sup>nd</sup> generations of IITs started by the Govt. of India. Today IITH offers 11 B.Tech programs, 1 B.Des program, 3 M.Sc programs, 18 M.Tech programs, 1 M.Des program, 1 MA program, and 15 Ph.D. programs in all branches of engineering, science, liberal arts, and design. IIT Hyderabad offers 2 years M.Tech program to the foreign Nationals in 9 different departments.

IITH in the past couple of years has been highly successful in building tie-ups with leading academic institutions around the globe. IITH enjoys a very special relationship with Japanese Universities and Industries that goes beyond academics and research collaborations. In fact, some of the iconic buildings in the IITH campus will carry the signature of Japanese architecture. IITH is creating a unique holistic educational ecosystem that offers interactive learning, a highly, flexible academic structure, cutting-edge research, strong industry collaboration, and entrepreneurship. It is providing an environment wherein students and faculty are not afraid to translate their dreams into realities.

## WORKSHOP DETAILS

### Workshop Organizer

Prof. Amirtham Rajagopal  
Professor,  
Department of Civil Engineering,  
IIT Hyderabad,  
Kandi, Sangareddy,  
Hyderabad-502284,  
India.  
Phone: 040 2301 6303

Website : [www.seismic2022.com](http://www.seismic2022.com)  
Email ID: [seismic.workshop@ce.iith.ac.in](mailto:seismic.workshop@ce.iith.ac.in)  
(Please refer to the website for further details)

### Important Dates

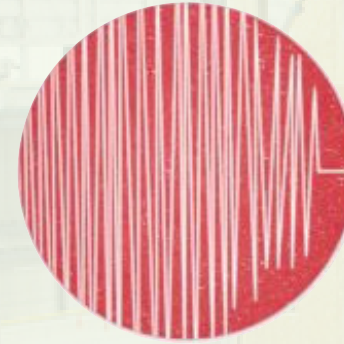
Last Day of Registration: 5<sup>th</sup> May 2022  
Date of Workshop: 12<sup>th</sup> & 13<sup>th</sup> May 2022

### Registration Fees

Fees per Delegate: Rs 5,000/-  
(Please refer to the website, for payment and registration link)

# INDIA-JAPAN WORKSHOP

on



## Computational Modeling of Damage and Seismic Vulnerability Assessment during Earthquakes in Building Systems

12<sup>th</sup> & 13<sup>th</sup> May 2022



భారతీయ సాంకేతిక విద్యార్థన సంస్థ హైదరాబాద్  
भारतीय प्रौद्योगिकी संस्थान हैदराबाद  
Indian Institute of Technology Hyderabad

Indian Institute of Technology Hyderabad

## Overview

The world faces economic and human losses caused by natural hazards such as earthquakes. The amount of losses are affected by the quality of preventive measures and emergency management. For this reason, seismic vulnerability assessment is considered a crucial part of a strategy for seismic risk mitigation and for improving the resiliency of places, especially the fast-growing cities. Seismic vulnerability can be defined as the degree of loss of a given element at risk, such as buildings, resulting from the occurrence of an earthquake event. The seismic vulnerability of a structure is a quantity associated with its weakness in the case of earthquakes of a given intensity. The value of this quantity and the knowledge of seismic hazards can be used to evaluate the expected damage from future earthquakes. Seismic Assessment provides a technical basis for the second-generation performance-based seismic design of structures e.g., offshore structures, buildings and bridges. Computational methods make it easy and economical to analyse structures. This workshop covers a plethora of topics on damage modeling and seismic vulnerability of RC, Masonry, and steel structures.

## Benefits of Attending the Workshop

The main objective of the Indo-Japan workshop is to highlight the importance and added value of collaborative research in the field of earthquake engineering as well as the relevance of Indo-Japan collaboration for the state-of-the-art large research testing infrastructures for the seismic risk reduction for the population. The major deliverable will be in arriving at Research Agenda Collaborative Research in Earthquake Engineering and related roadmap. The workshop will discuss in detail the computational modeling of damage and seismic vulnerability assessment during earthquakes in building systems.

### Topics to be Covered

- Risk Assessment of Damage
- Nonlocal Approaches for Modeling and Predicting Damage
- Strengthening of RC Structures for Earthquake Resistance
- Computational Modeling of Damage and Seismic Vulnerability
- Phase-Field Modeling

## SPEAKERS OF THE WORKSHOP



**Dr. Takuzo Yamashita**  
National Research Institute for Earth Science and  
Disaster Prevention (NIED)  
Japan



**Koichi Kajiwara**  
National Research Institute for Earth Science and  
Disaster Prevention (NIED)  
Japan



**Jun Fujiwara (FUJIWARA Jun)**  
National Research Institute for Earth Science and  
Disaster Prevention (NIED)  
Japan



**Prof. KVL Subramaniam**  
Indian Institute of Technology Hyderabad India



**Prof. S. Suriya Prakash**  
Indian Institute of Technology Hyderabad India



**Prof. Amirtham Rajagopal**  
Indian Institute of Technology Hyderabad India



**Prof. B. Umashankar**  
Indian Institute of Technology Hyderabad India



**Prof. Mahendra Kumar Madhavan**  
Indian Institute of Technology Hyderabad India



**Dr. Surendranadh Somala**  
Indian Institute of Technology Hyderabad India



**Dr. Anil Agarwal**  
Indian Institute of Technology Hyderabad India



**Dr. Mahendra Kumar Pal**  
BHU Varanasi  
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**Dr. Raghu Piska**  
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