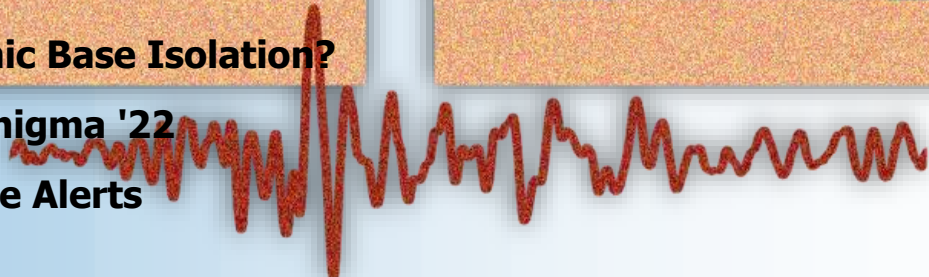


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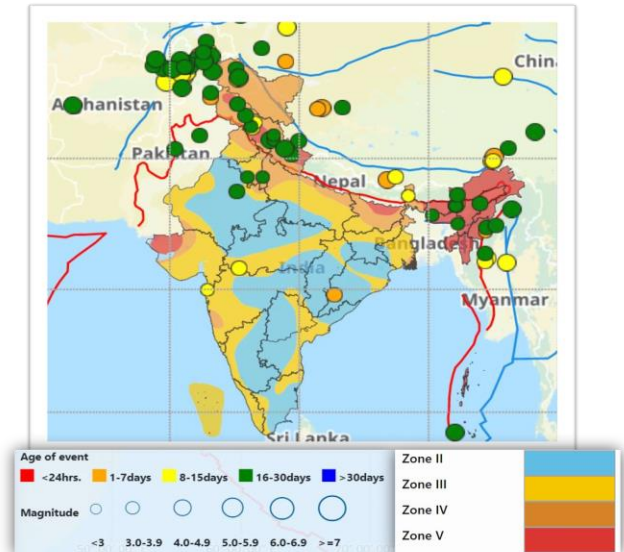
SEISMIC BASE ISOLATION?

'Seismic Base Isolation' has now been an indispensable part of earthquake engineering. The core idea of seismic base isolation is to introduce a flexible buffer system between the base and superstructure. Introduction of flexible interface decouples the superstructure from ground acceleration. In other words, the structure above the flexible interface moves rigidly when subjected to earthquakes. This helps to reduce superstructure response considerably. The base isolation technique has been implemented successfully all over the world. Some of the applications of seismic base isolation are reproduced here:

- Los Angeles City Hall was retrofitted with seismic base isolation in 2001 (USA)
- Shimizu Corporation Tokyo Headquarters is equipped with base isolation built-in 2012 (Japan)
- Main Building of Shimizu Corporation Tokyo, built-in 2003, also utilizes seismic base isolation (Japan) ([Know more](#))

RECENT EARTHQUAKES

Seismic activity in the Indian subcontinent from Jan 1 2022, to Feb 28 2022



Source: <https://seismo.gov.in/MIS/riseq/earthquake>

LEARNING FROM EARTHQUAKES

2005 THE NORTHERN SUMATRA EARTHQUAKE, INDONESIA



Source: http://en.people.cn/200504/01/eng20050401_179047.html

On Mar 28 2005, the Nias and Simeulue islands experienced an earthquake of magnitude M8.7 with a depth of 30 km. The epicentre of the earthquake was on the Great Sumatran fault, between the two islands (2.074°N, 97.013°E). This is 115 km from Gunungsitoli (the district capital of Nias) and 84 km from Sinabang in Simeulue. Due to the collapse of many houses and shops, almost 1,000 people were killed in Gunungsitoli, and around 100 people were killed in Simeulue. The damage was concentrated in certain areas close to the beach. Most of the damage to infrastructure occurred to bridges, and fissures along the road were observed. Investigations found that poor quality of concrete and detailing contributed to the collapses. In many places, the columns and beams were not constructed in accordance with prevailing practice. ([Know more](#))

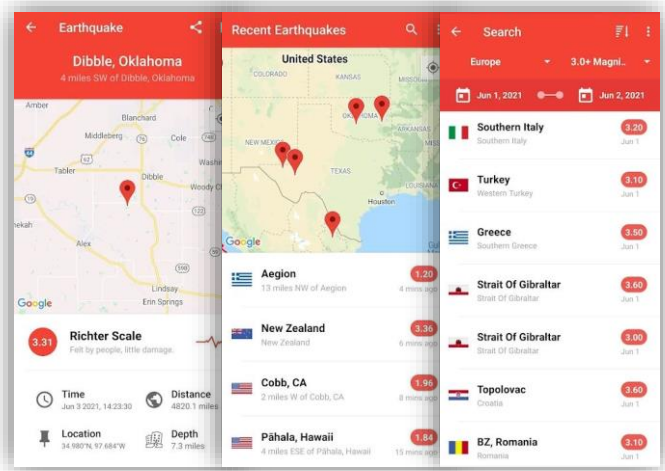
SEISMIC INVISIBILITY CLOAK

The primary objective of earthquake engineering is to make civil infrastructure less vulnerable to seismic forces. Several approaches are being adopted to achieve this, like making the structure ductile to withstand earthquake-induced large deformations, incorporating special energy dissipating devices, isolating the structure from the source of vibrations using base isolation, etc. However, recently a new technique has been proposed, which involves creating an invisibility cloak around the system by modifying the ground on all sides, thereby making the building unreachable to seismic waves. The utility of such a cloak is in diverting the seismic waves around the building without allowing them to infiltrate the region within. The technique takes its motivation from the concept of electromagnetic cloaking and employs seismic meta-materials to build a cloak that controls the propagation of seismic waves. The long seismic waves, which are known to be most destructive, coming in contact with the cloak are shortened and are directed away from the structure. ([Know more](#))

SEISMOTECH MY EARTHQUAKE ALERTS - MAP

My Earthquake Alerts is a free earthquake monitoring app that gives you all the information you need, including push notifications. It also has a stunningly basic design that is suited for Android's most recent versions. Some of the salient features include:

- Live earthquake maps
- Free earthquake alerts
- Search feature to find earthquake history
- Find the exact location, the depth and the distance away from you.
- View the earthquake feed on a map and in a list.
- Uses information from a wide variety of worldwide earthquake networks, including the USGS.



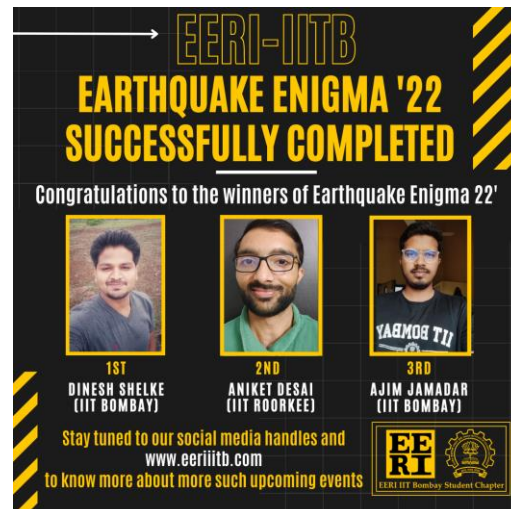
Download from Play Store: [Earthquake Alerts](#)
Download from App Store: [Earthquake Alerts](#)

EARTHQUAKE ENGINEERING CONFERENCES AND EVENTS

- 17th Symposium on Earthquake Engineering in IIT Roorkee from Nov 17 to Nov 19, 2022. Check out for more at <https://www.iitr.ac.in/17see/index.html>
- The Third European Conference on Earthquake Engineering and Seismology in Bucharest from Sept 4to Sept 9 2022. Check out for more at <https://3eceeds.ro/conference/>

EERI IIT BOMBAY NEWS EARTHQUAKE ENIGMA'22

On Feb 5, 2022, EERI IIT Bombay successfully conducted an online earthquake quiz under the banner of Earthquake Enigma'22. It was an online "Googler" in which students were given questions/problems and they had to find answers with a google search! It challenged students' thinking and gave them the opportunity to explore the earthquake engineering field. The quiz was open to all the colleges with any background. EarthquakeEnigma'22 attracted total 170 participants across 24 colleges of India. Dinesh Shelke (IIT Bombay), Aniket Desai (IIT Roorkee) and Ajim Jamadar (IIT Bombay) were declared first, second and third position holders of the online quiz contest, respectively.





ALL ABOUT EERI

The Earthquake Engineering Research Institute (EERI) is the leading non-profit membership organization dedicated to understanding earthquake risk and increasing earthquake resilience in communities worldwide. EERI membership includes researchers, practitioners, and students in engineering, geoscience, social science, architecture, planning, government, emergency management, public health, and policymaking. For more info <https://www.eeri.org/>

EERI IIT BOMBAY STUDENT CHAPTER

The EERI IIT Bombay student chapter aims to learn about earthquakes and their social, economic, and environmental impact and practices to reduce earthquake risk. This Chapter motivates students to pursue a career in the field of earthquake engineering and related fields. EERI Student Chapter at IIT Bombay provides a platform to participate in several EERI competitions and activities.

SUPPORT US

Sponsors from a variety of industries and academic areas are invited to support the EERI IIT Bombay Students Chapter. Our alliance will be built on teamwork, with reciprocal benefits for both parties.

BECOME EERI MEMBER

EERI membership will help you stay current with the latest scientific and engineering advances, better understand the social and economic impacts of earthquakes and serve as an advocate for seismic safety. Follow the link: [join-eeri-today](#)

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