



Induced Seismicity Effects on the Built Environment, Energy Production, Transportation and Storage

This European Regional Seminar aims to give a broad perspective concerning the induced seismicity resulting from the exploitation of energy resources as well as effects of earthquakes on energy production, storage and transportation. Participants will be professionals from all around Europe; experts on the field and other registered attendees.

Themes

The themes of the Regional Seminar are, but not limited to, induced seismicity, storage facilities (underground and above ground) for energy resources, transportation and transmitting lines. A special session, dedicated to the 6th of February Türkiye Earthquakes, is also planned in the first day of the seminar.

Background

Groningen is one of the largest on-land gas fields in the world with continuous gas extraction operations since 1963. Earthquakes up to magnitude 3.6 in 3km depth, with the largest recorded horizontal acceleration of 0.11g, have been triggered since 2012 inflicting structural damage on houses and other buildings on the gas field and arousing public unrest.

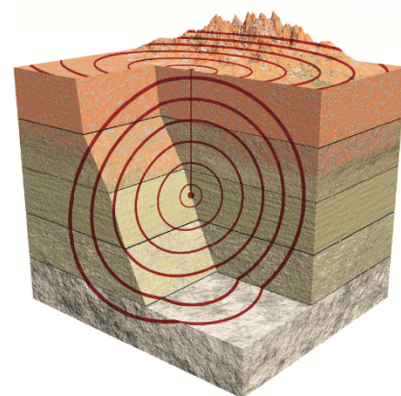
Programme

The seminar will be devoted to invited lectures with additional time allocated for short presentations by young researchers concerning their ongoing research or engineering projects related to the seminar topic. A discussion panel is also organized for the theme of "Positive Research", aiming to discuss also the opportunities the negative induced earthquakes problems have brought to the region of Groningen. The seminar will be 4 days with a field trip in Day #4.

Contact and application

e.smyrou@pl.hanze.nl , i.e.bal@pl.hanze.nl

<https://cbd.eventsair.com/deea/deea-reg/Site/Register>



EAEE (www.eaee.org) is the European umbrella organization for professionals and scientists working on earthquake engineering. The regional seminars of EAEE are organized to inform young researchers, practicing engineers and scientists about the new developments in the field of earthquake engineering.

DEEA (www.deea.nl) has been established with the aim of connecting the engineering and research communities in the Netherlands and working on local earthquake issues with the rest of the earthquake engineering community around the world.

Registration and Participation

If you would like to attend the event, you can register at the following link:

<https://cbd.eventsair.com/deea/deea-reg/Site/Register>

The registration fee is 50€ for one day, 75€ for two and 100€ for 3 days. The event is free for the DEEA members. If your company or yourself is a member, then you will receive a free registration code. Student membership is free, individual membership costs 50€/year and the company membership to DEEA is 500€ or 1000€ per year depending on the size of the company. If you would like to become a member, you can directly download the membership form at:

https://drive.google.com/file/d/1ryBLZYmwPalWYy2okvZwy_ck3kYOwPE8/view

Once you fill in the form and send it to i.e.bal@pl.hanze.nl, we will send you back a free registration code.

Seminar Venue

The seminar will take place at BuildingG:

<https://www.building.nl>

Zernikelaan 17, 9747 AA Groningen



22nd EAEE European Regional Seminar			Sponsors :
Induced Seismicity Effects on the Built Environment, Energy Production, Transportation and Storage			Ministry of Economic Affairs and Climate Policy
23-26 May, Groningen, Netherlands			Nationaal Coördinator Groningen (NCG)
			Staatstoezicht op de Mijnen (SodM)
23rd of May, Tuesday			
09:00-09:30	Registration and the Welcome Coffee		
09:30-10:00	Opening Speeches		
10:00-12:00	Dedicated Special Session - 6th February Türkiye Earthquakes	10:00-10:30 Alper İliki , Istanbul Tech. Univ., Türkiye	Observations from the 6th February Kahramanmaraş, Türkiye Earthquakes
		10:30-11:00 Bahadır Şadan , MEF Univ., Türkiye	Performance of Seismic Isolated Hospital Buildings during 06.02.2023 Kahramanmaraş, Türkiye Earthquakes
		11:00-11:30 K. Önder Çetin , METU, Türkiye	Geotechnical Reconnaissance Findings of the November 6, 2023 Kahramanmaraş-Türkiye Earthquake Sequence
		11:30-12:00 Eleni Smyrou , Hanze UAS, Netherlands	6th February Kahramanmaraş, Türkiye Earthquakes from Earthquake Engineering Perspective
12:00-13:00	Lunch Break		
13:00-14:30	Resilience, Assessment and Stregthening	13:00-13:30 Maurice Hermens , Royal HaskoningDHV, Netherlands	Challenges in Achieving Consistent Seismic Resilience Assessments
		13:30-14:00 Kerem Peker , Erdemli, Türkiye	Seismic Assessment of Industrial Facilities
		14:00-14:30 Andreas Kappos , EAEE & Khalifa Univ, UAE	Strengthening of Existing Masonry Buildings
14:30-15:00	Coffee Break		
15:00-17:00	Induced Seismicity, Monitoring, Reliability and Pipelines	15:00-15:30 Jorien van der Wal , SoDM, Netherlands	An Overview of Induced and Natural Earthquakes in the Netherlands
		15:30-16:00 Pat Rajeev , Swinburne Univ., Australia	Pipeline Performance to Ground Vibration and Movement
		16:00-16:30 Ralf Fritschen , DMT Group, Germany	Monitoring of Induced Seismicity in Germany: A History of More than 100 years
		16:30-17:00 Michalis Fragiadakis , NTUA, Greece	Reliability and Health Assessment of Energy Infrastructure
18:30-20:30	Welcome Dinner for the EAEE Representatives and Invited Speakers		
24th of May, Wednesday			
09:00-11:00	Analysis, Monitoring and Structural Assessment	09:00-09:30 G. Michele Calvi , EUCENTRE, Italy	EAL-based Assessment and Strengthening for Induced Seismicity
		09:30-10:00 Christoph Butenweg , Univ. Aachen, Germany	Advanced Monitoring of Induced and Natural Seismicity in Germany for Industrial Plants and Infrastructure Using Digital Modeling
		10:00-10:30 Roberto Nascimbene , EUCENTRE, Italy	Seismic Risk Analysis of Storage Tanks and Ancillary Elements: Lessons Learnt from Past Earthquakes and Future Trends!
		10:30-11:00 Amir M. Kaynia , Norconsult, Norway	Effect of Seismic Waves on Bottom-fixed and Floating Wind Turbines
11:00-11:30	Coffee Break		
11:30-12:15	Young Professional Presentations	11:30-11:45 Stelios Kallioras , Univ. of Pavia, Italy	Vertical Ground Motion Effects on the Seismic Response of URM Structures
		11:45-12:00 Stefanie Apostolaki , AUTH, Greece	The Impact of the Adoption of the ESHM20 on the Seismic Design and Risk Assessment of Industrial Complexes
		12:00-12:15 Onur Arslan , TU Delft & Hanze UAS, Netherlands	Groningen Masonry Houses and Seismic Behaviour of Connection Details in Case of Induced Seismicity
12:15-13:15	Lunch Break		
13:15-15:15	Masonry, Damage and Interdisciplinary Work	13:15-13:45 Katrin Beyer , EPFL, Switzerland	Load History Effects on Masonry Walls
		13:45-14:15 Rita Bento , Univ. of Lisbon, Portugal	Monitoring Historical Masonry Structures
		14:15-14:45 İhsan E. Bal , Hanze UAS, Netherlands	CLE - Comfort Level Earthquake: A New Concept for Handling Damage Claims in Case of Induced Seismicity
		14:45-15:15 Elles Bulder , Hanze UAS, Netherlands	Reflections on a Collaborative Effort between Engineering, Social Science, and Residents in a Seismic Strengthening Experiment
15:15-15:45	Coffee Break		
15:45-17:00	PANEL DISCUSSION - Induced Seismicity and Positive Research		
18:00-20:00	Gala Dinner		
25th of May, Thursday			
09:00-11:00	Heritage and Masonry & Thematic Guest Lecture	09:00-09:30 Han Krijgsman , ABT Engineering, Netherlands	Preserving Heritage Church Buildings in Groningen
		09:30-10:00 Jan Rots , TU Delft, Netherlands	Masonry Modelling for Understanding Damage in Groningen
		10:00-10:30 Jan-Jap Aué , Hanze UAS, Netherlands	Future of Energy in Europe
		10:30-11:00 Onno Dijkstra , Fugro, Netherlands	Monitoring the Effects of Mining and Determining Causes of Building Damage in Groningen
11:00-11:30	Coffee Break		
11:30-12:30	Visit to the Enegry Transition Centre Hanze / Networking		
12:30-13:30	Lunch Break		
	Hazard and Risk	14:00-14:30 Jan van Elk , NAM, Netherlands	The Study and Data Acquisition Program into Induced Seismicity in Groningen Led by NAM
		14:30-15:00 Francesco Graziotti , EUCENTRE, Italy	A Comprehensive Testing Programme Supporting Seismic Risk Analysis of URM Buildings Subjected to Induced Earthquakes
		15:00-15:30 Michail Ntinalaxis , Independent Consultant, UK	Overview of the recorded ground-motions in Groningen and development of the bespoke Groningen GMPMs
15:30-16:00	Coffee Break		
16:00-17:00	Young Professional Presentations	16:00-16:15 Spyridon Diamadopoulos , NTUA , Greece	Seismic Risk Assessment of Freestanding Nonstructural Components in Energy Production Facilities
		15:45-16:00 Gal Shany , Israel Inst. of Tech., Israel	Risk Analysis and Assessment Methodology of Tunneled Nuclear Power Plant Exposed to Munitions Hits
		16:00-16:15 Piotr Bonkowski , Opole Univ. of Tech., Poland	Rocking Component from Induced Seismicity and Natural Earthquakes and Its Effect on Slender Building Structures
		16:15-16:30 Alvand Moshfeghi , Istanbul Tech. Univ., Türkiye	Out-of-plane Shake Table Tests on Masonry Walls Representing Groningen Houses
17:00-17:15	Closure of the Seminar		
26th of May, Friday			
09:30-15:30	Field Trip		