



2<sup>nd</sup> Announcement



# 22<sup>nd</sup> European Regional Seminar Induced Seismicity due to Human Activities

11-14 May 2020

Zernike Campus, Groningen, Netherlands

**European Association of Earthquake Engineering (EAAE)  
Dutch Earthquake Engineering Association (DEEA)**

## EAAE Regional Seminars

EAAE ([www.eaae.org](http://www.eaae.org)) is the European umbrella organisation for professionals and scientists working on earthquake engineering. The regional seminars of EAAE are organised to inform young researchers, practising engineers and scientists about the new developments in the field of earthquake engineering. This European Regional Seminar aims to give a broad perspective concerning the induced seismicity resulting from the exploitation of energy resources. Participants will be professionals from all around Europe; experts on the field, young professionals and other registered attendees.



## DEEA – Dutch Earthquake Engineering Association

DEEA ([www.deea.nl](http://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. The Association has been initiated by NoorderRuimte at Hanze University of Applied Sciences in Groningen and was further supported by Board Members from industry as well as from TU Delft and University of Groningen / KNMI.

Groningen is the largest on-land gas field 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.

## Seminar Content

The main part of the seminar will be devoted to invited lectures with additional time allocated for short presentations by young researchers, under the age of 35, concerning their ongoing research or engineering projects related to induced seismicity. Discussion sessions will also be organised on some selected topics. The invited lecturers are European experts on the topic of induced seismicity.

The seminar will be 4 days with a field trip in Day #4. The trip will be to the gas field, to visit the project sites and to enhance interaction among young participants. The themes of the Regional Seminar are i) Geological & Geophysical Aspects, ii) Hazard & Risk, iii) Geotechnical Issues, iv) Seismic Monitoring, v) Structural Assessment & Strengthening, and vi) Structural Experiments and Modelling.

### Local Organizing Committee:

*Ihsan Engin Bal (Hanze UAS, Groningen)*  
*Willemijn van Donselaar (National Coördinator Groningen)*  
*Carolina Sigaran-Loria (Royal Haskoning DHV)*  
*Francesco Messali (TU Delft)*  
*Annemarie Muntendam-Bos (SoDM & TU Delft)*  
*Eleni Smyrou (Hanze UAS, Groningen)*

### DEEA Board:

*Ihsan Engin Bal (Hanze UAS, Chair)*  
*Janneke van Ginkel (University of Groningen / KNMI)*  
*Rudi Roijackers (BORG / ABT)*  
*Jan Rots (TU Delft)*  
*Otto Wassenaar*  
*Eleni Smyrou (Hanze UAS, Groningen - Secretary General)*

Contact for the Regional Seminar: [deea2020.regionalseminar@gmail.com](mailto:deea2020.regionalseminar@gmail.com)



## Invited Speakers

### Morning

#### Day 1 *Session 1 - Geological and Geophysical Aspects*

**Sergei Saphiro**, *Freie Universität Berlin, Germany*  
**Torsten Dahm**, *GFZ, Germany*  
**Stephen J. Bourne**, *Shell*  
**Annemarie Muntendam-Bos**, *SoDM*

### Afternoon

#### *Session 2 - Hazard and Risk*

**Christoph Butenweg**, *RWTH-Aachen, Germany*  
**Mauro Dolce**, *Civil Protection, Italy*  
**Jan van Elk**, *NAM*  
**Andreas Kappos**, *Khalifa Univ., Abu Dhabi*  
(*Secretary General of EAGE*)

#### Day 2 *Session 3 - Geotechnical Issues*

**Amir Kaynia**, *NTNU, Norway*  
**Russel Green**, *Virginia Tech., USA*  
**Jitse Puijksma**, *TNO*  
**Mandy Korff**, *Deltares*  
**Siefko Slob**, *Cohere Consultants*

#### *Seismic Monitoring*

**Rita Bento**, *University of Lisbon, Portugal*  
**Ralf Fritschen**, *DMT, Germany*  
**Elizabeth Vintzileou**, *NTUA, Greece*  
**Bernard Dost**, *KNMI*

#### Day 3 *Structural Assessment & Strengthening*

**İhsan Engin Bal**, *Hanze UAS*  
**Michele Calvi**, *University of Pavia, Italy*  
**Rudi Roijackers**, *BORG / ABT*  
**Ans Bekkering**, *NCG*

#### *Structural Experiments and Modelling*

**Guido Magenes**, *University of Pavia, Italy*  
**Vasilis Sarhosis**, *University of Leeds, UK*  
**Jan Rots**, *TU Delft*  
**Ömer Türkmen / Simon Wijte**, *TU Eindhoven*



Photo: Paul Tolenaar