International Training Course on

Seismology, Seismic Data Analysis, Hazard Assessment and Risk Mitigation

15 - 30 June 2026
Potsdam, Germany

Scientific Programme

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Organised and sponsored by

GFZ Helmholtz Centre for Geosciences, Potsdam, Germany

and

Geo-INQUIRE* (Geosphere INfrastructures for QUestions into Integrated REsearch)

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List of institutions, lecturers and assistants contributing to the International Training Course on "Seismology, Hazard Assessment and Risk Mitigation", June 15 to 30, 2026 in Potsdam, Germany

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Scientific Programme

International Training Course on

Seismology, Seismic Data Analysis, Hazard Assessment and Risk Mitigation

Potsdam, Germany, June 15 to 30, 2026

1. Opening Day

Monday, June 15 — Opening

09:00 - 10:00 — *Dr. Simone Cesca*
Presentation of the ITC

Prof. Dr. Torsten Dahm
Presentation of GFZ

Welcoming speeches by authorities and official opening of the ITC 2026

10:00 - 10:30 — *Break for a welcome drink - Group Photo*

10:30 - 11:15 — S. CESCA
Studying seismicity to track magma: recent case studies from Europe to Africa

11.15 - 12:00 — C. NIEVAS
From hazards to consequences to people and the built environment: challenges of multi-hazard risk modelling

12:00 - 13:30 — *Lunch Break*

13:30 - 15:00 — T. DAHM
1.1 Aims and fundamentals of seismology

15:00 - 15:30 — *Coffee break*

15:30 - 17:00 — T. DAHM
1.2 Seismic sources and source parameters

2. Seismology, Instrumentation, Seismogram Analysis, Earthquake Source Parameter, and Wave Propagation

Tuesday, June 16 — Seismic Monitoring (SeisComP)

08:30 - 10:00 — T. DAHM
2.1 Theory of wave propagation: Basics of numerical methods

10:30 - 12:00 — T. DAHM
2.2 Seismic waves in the real Earth, required seismic records and derived Earth models

13:30 - 15:00 — P. EVANS, A. STROLLO
2.3 Introduction to SeisComP

15:30 - 17:00 — P. EVANS, J. QUINTEROS, A. STROLLO
2.4 Hands-on exercise: Intro to GUIs and usage, Event location, focal mechanisms and magnitudes with SeisComP

Evening:
18:00 - 19:30 — joint Geo-INQUIRE-ITC ice breaker and barbecue

Wednesday, June 17 — Seismic Monitoring and ORFEUS/EMSC EPOS-S services (SeisComP)

08:30 - 10:00 — A. STROLLO, P. EVANS
2.5 Event location and Magnitudes in SeisComP

10:30 - 12:00 — J. QUINTEROS, H. JOO, P. EVANS
2.6 FDSN, EIDA/ORFEUS and EMSC services: contributing and using them

13:00 - 17:00 — Geo-INQUIRE Annual Meeting (House H)
2.7 Highlight talks and Market place with presentations and live demos of services, software, products

17:00 - 18:15 — Geo-INQUIRE Annual Meeting (House H)
optional / for those interested
2.8 A Research Infrastructure (RI) Perspective on Geo-INQUIRE: Impact, Challenges and Lessons Learned

Evening:
19:00 – 20:30 — *Cultural Presentations of Participants (1-7)*

Thursday, June 18 Earthquake Source, Moment tensor inversion, EMSC/EFHER EPOS-S services

08:30 - 10:00 G. PETERSEN, P. BÜYÜKAKPINAR, S. CESCA
2.9 Introduction to Pyrocko

10:30 - 12:00 P. BÜYÜKAKPINAR
2.10 Services for earthquake data access and data formats

13:30 - 15:00 R. BOSSU
2.11 EMSC services and earthquake information in the digital age

15:30 - 17:00 N. ROMANO
2.12 EFEHR services and participation

Evening:
19:00 – 20:30 *Cultural Presentations of Participants (8-13)*

Friday, June 19 Moment tensor inversion, Scientific presentations

08:30 - 10:00 S. CESCA
2.13 Source inversion in seismology

10:30 - 12:00 G. PETERSEN, S. CESCA
2.14 Source inversion with Grond

13:30 - 15:00 G. PETERSEN, P. BÜYÜKAKPINAR, A. CARRILLO PONCE
2.15 Source inversion exercise

15:30 - 17:00 G. PETERSEN, P. BÜYÜKAKPINAR, A. CARRILLO PONCE
2.16 Source inversion exercise

Saturday, June 20 Leisure time

Sunday, June 21 Leisure time

3. Engineering Seismology, seismic hazard and risk assessment, Seismic Hazard Assessment and Seismic Risk

Monday, June 22 Introduction to seismic hazard assessment

08:30 - 10:00 F. COTTON
3.1 Introduction into Seismic Hazard and Risk Assessment

10:30 - 12:00 F. COTTON
3.2 Factors controlling strong ground-shaking characteristics

13:30 - 15:00 G. WEATHERILL
3.3 EFEHR services: earthquake catalogues and seismic sources

15:30 - 17:00 M. PILZ
3.4 How to take site effects into account?/ Ground shaking site effects. Introduction

Tuesday, June 23 Strong motions. Observation and prediction

08:30 - 10:00 F. COTTON
3.5 Ground-Motion prediction

10:30 - 12:00 F. COTTON
3.6 Principles of probabilistic seismic hazard analysis

13:30 - 15:00 G. WEATHERILL
3.7 EFEHR services: ground-motion models testing and seismic hazard assessment

15:30 - 17:00 M. PILZ
3.8 Methods to assess site-specific ground motion without measurements

Evening:
19:00 – 20:30 *Cultural Presentations of Participants (14-20)*

Wednesday, June 24 Site effects evaluation and microzonation

08:30 - 10:00 F. COTTON
3.9 Uncertainty analysis

10:30 - 12:00 E. TUERKER
3.10 Seismic building codes

13:30 - 15:00 I. LIOU
3.11 Aleatory Variability and Epistemic Uncertainty in Probabilistic Seismic Hazard Analysis

15:30 – 18:30
3.12 Scientific Presentations of Participants

Thursday, June 25 Probabilistic seismic Hazard assessment and uncertainty analysis

08:30 - 10:00 I. LIOU
3.13 Introduction to Probabilistic Fault Displacement Hazard Analysis

10:30 - 12:00 F. COTTON
3.14 Lessons learned from recent earthquakes

13:30 - 15:00
3.15 Seismic hazard: questions/answers session

15:30 – 18:30
3.16 Scientific Presentations of Participants

Friday, June 26 From hazard to risk, InSAR

08:30 - 10:00 C. NIEVAS (tbc), F. COTTON
3.15 From Hazard to risk

10:00 - 12:00
3.16 Geo-INQUIRE/EFEHR services related to risk

13:30 - 15:00 S. METZGER, R. ZINKE
3.17 Introduction to and interpretation of satellite-radar interferometric (InSAR) data

15:30 - 17:00 S. METZGER, R. ZINKE
3.18 Practical's: From a single interferogram to InSAR time-series analysis

Evening:
18:00 *Closing Dinner*

Saturday, June 27 Leisure time / Departure of participants

Sunday, June 28 Leisure time

Monday, June 29 and Tuesday, June 30 EXPERT DAYS

Topics:
- Moment Tensor inversion
- Statistical seismology
- InSAR data analysis and modeling
- Seismic Hazard, Site effects
- SeisComP, instrumental seismology seismic stations deployment and operation ....