

International Training Course on  
**Seismology, Seismic Data Analysis,  
Hazard Assessment and Risk Mitigation**

5 - 17 October 2025  
(online)

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**Scientific Programme**

Organised and sponsored by

**GFZ Helmholtz Centre for Geosciences**

with the local support of

**Institut et Observatoire de Géophysique d'Antananarivo (IOGA),  
Université d'Antananarivo  
Madagascar**

List of institutions, lecturers and assistants contributing to the International Training Course on "Seismology, Hazard Assessment and Risk Mitigation", October 5 to 18, 2025 in Antananarivo, Madagascar

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**Institut et Observatoire de Géophysique d'Antananarivo(IOGA), Madagascar**

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# Scientific Programme

## International Training Course on Seismology, Seismic Data Analysis, Hazard Assessment and Risk Mitigation Antananarivo, Madagascar, October 5 to 18, 2025

<b>1. <u>Opening Day</u></b>		
<b>Sunday, Oct. 5</b>		Opening
16:00 - 17:30	1.1	<i>Dr. Simone Cesca, Dr. Hoby Razafindrakoto</i> Opening of the ITC 2025
	1.2	<i>Prof. Solofo Rakotoarisoa, Director of IOGA</i> Presentation of IOGA
	1.3	<i>Dr. Simone Cesca</i> Online ITC format and program
	1.4	<i>Dr. Peter Evans</i> The ITC Virtual Box
<b>2. <u>Seismology, Instrumentation, Seismogram Analysis, Earthquake Source Parameter, and Wave Propagation</u></b>		
<b>Monday, Oct. 6</b>		Introduction to seismology, SeisComp
09:00 - 10:30	2.1	T. DAHM Introduction to concepts in seismology
11:00 - 12:00	2.2	Open discussion (T. Dahm)
14:00 - 15:30	2.3	P. EVANS, A. STROLLO Introduction to SeisComp
16:00 - 17:00	2.4	Open discussion (P. Evans, A. Strollo)
<b>Tuesday, Oct. 7</b>		SeisComp – data acquisition, handling and curation
09:00 - 10:30	2.5	P. EVANS, A. STROLLO SeisComp setup and quick start
11:00 - 12:00	2.6	Open discussion (P. Evans, A. Strollo)
14:00 - 15:30	2.7	P. EVANS, A. STROLLO SeisComp playback demonstration
16:00 - 17:00	2.8	Open discussion (P. Evans, A. Strollo)
17:30 – 19:00		<i>Cultural Presentations of the Participants (1-5)</i>

<b>Wednesday, Oct. 8</b>		Pyrocko - Source inversion
09:00 – 10:30	2.9	S. HEIMANN Introduction to Pyrocko
11:00 – 12:00	2.10	Open discussion (S. Heimann, S. Cesca)
14:00 – 15:30	2.11	S. HEIMANN Data visualization & processing, synthetic seismograms
16:00 – 17:00	2.12	Open discussion (S. Heimann, S. Cesca)
<i>17:30 – 19:00</i>		<i>Cultural Presentations of the Participants (6-10)</i>
<b>Thursday, Oct. 9</b> <span style="float: right;">Moment tensor inversion</span>		
09:00 - 10:30	2.13	S. CESCA Source inversion in seismology
11:00 - 12:00	2.14	Open discussion (S. Heimann, S. Cesca)
14:00 - 15:30	2.15	S. HEIMANN, S. CESCA Source inversion with Grond
16:00 - 17:00	2.16	Open discussion (S. Heimann, S. Cesca)
<i>17:30 – 19:00</i>		<i>Cultural Presentations of the Participants (11-18)</i>
<b>Friday, Oct. 10</b> <span style="float: right;">Site effects</span>		
09:00 - 10:30	3.1	F. COTTON Introduction to seismic hazard and risk assessment
11:00 - 12:00	3.2	Open discussion (M. Pilz)
14:00 - 15:30	3.3	M. PILZ Parameters describing strong ground motions in engineering seismology
16:00 - 17:00	3.4	Open discussion (M. Pilz)
<b><u>3. Engineering Seismology, seismic hazard and risk assessment, Seismic Hazard Assessment and Seismic Risk</u></b>		
<b>Monday, Oct. 13</b>		<span style="float: right;">Site Effects / Strong Motion</span>
09:00 - 10:30	3.5	M. PILZ Understanding site effects: physical processes and evaluation methods

11:00 - 12:00	3.6	Open discussion (M. Pilz)
14:00 - 15:30	3.7	F. COTTON Uncertainty quantification and probabilistic concepts in Seismic Hazard Assessment
16:00 - 17:00	3.8	Open discussion (F. Cotton)
<b>Tuesday, Oct. 14</b>		Seismic Hazard
09:00 - 10:30	3.9	M. PILZ Accounting for site effects in seismic hazard estimation
11:00 - 12:00	3.10	Open discussion (M. Pilz)
14:00 - 15:30	3.11	F. COTTON Probabilistic seismic hazard analysis: core concepts and case studies
16:00 - 17:00	3.12	Open discussion (F. Cotton)
<b>Wednesday, Oct. 15</b>		Seismic Hazard
09:00 - 10:30	3.13	D. BINDI Seismic hazard assessment in practice: lessons learned from recent earthquakes
11:00 - 12:00	3.14	Open discussion (D. Bindi)
14:00 - 15:30	3.15	<i>Scientific Presentations of the Participants (1-6)</i>
16:00 - 17:00	3.16	<i>Scientific Presentations of the Participants (7-9)</i>
<b>Thursday, Oct. 16</b>		Seismic Hazard
09:00 - 10:30	3.17	F. COTTON Seismic hazard assessment: lessons from recent earthquakes and open challenges
10:30 - 12:00	3.18	Open discussion (F. Cotton)
14:00 - 15:30	3.19	<i>Scientific Presentations of the Participants (10-15)</i>
16:00 - 17:00	3.20	<i>Scientific Presentations of the Participants (16-18)</i>

<b>4. <u>Geodesy</u></b>		
<b>Friday, Oct. 17</b>		InSAR
09:00 - 10:30	4.1	S. METZGER Introduction to and interpretation of satellite-radar interferometric (InSAR) data
11:00 - 12:00	4.2	Open discussion (S. Metzger)
14:00 - 15:30	4.3	S. METZGER Practical's: From a single interferogram to InSAR time-series analysis
16:00 - 17:00	4.4	Open discussion (S. Metzger)
<b>5. <u>Expert days</u></b>		
<b>October, 20-31</b>	Remote expert days (2-3 days)	