

MONITORING THE CULTURAL HERITAGE IN SEISMIC AREAS

Organized by CERI - Centre for Research on Prediction, Prevention, and Mitigation of Geological Risks, and Department of Earth Sciences of Sapienza University of Rome



IV Summer School
of STABLE* project

H2020-MSCA-RISE-2018

12 - 14
SEPTEMBER
2023



SAPIENZA
UNIVERSITÀ DI ROMA

CERI

Centro di Ricerca Previsione, Prevenzione e
Controllo dei Rischi Geologici - Ambientali



About the School

The great development of land and infrastructure monitoring and control systems in recent decades has allowed the use of on-site and remote monitoring also for the protection of cultural heritage from the consequences of geohazards but also of human activities. Earthquake occurrence causes one of most relevant natural risk for the cultural heritage in many European countries, such as Italy, Greece and Cyprus, that which constitute the partnership of STABLE - "STructural stABiLity risk assessment" project, funded under Horizon 2020 Framework Program - MSCA Research and Innovation Staff Exchange (RISE) 2018. The relevance of exposure to seismic risk of cultural heritage is widely demonstrated both by the destructive effects of recent earthquakes on monuments, and by the historical information on the effects of seismic events of past centuries.

During the summer school "Monitoring the cultural heritage in seismic areas" the following topics will be addressed:

- local seismic response (for sites where historical buildings and monuments are located);
- history of cartography of the risk to which the Italian cultural heritage is exposed up to the present day;
- foundations on the behavior of masonry structures;
- methods of investigation and monitoring of the subsoil and structures, with focus on monitoring by satellite platform;
- mitigation interventions and recent case studies.

The event is organized in cooperation with the "Centro Studi" of the National Council of Geologists, and lasts three days, two of which at the Sapienza University of Rome, and the third day in Rieti, which is dedicated to a technical visit to the historical city center (italian test site of the STABLE project). It will be also possible to attend a workshop on related topics (in Italian language) entitled "Sistema per la Simulazione dei Danni da Terremoto (SIS-DAT)", that will be held at the Rieti, in the Sapienza headquarters.

CERI is a partner of the European project STABLE which supports financially this summer school.

The school is open to

Participants and partners of the STABLE project; PhD and Master's degree students in Earth Sciences, Structural and Geotec.

Engineering, Earth Observation, Conservation of Cultural Heritage; Professional Geologists and Engineers for whom APC professional credits required.



**REGISTRATIONS
UNTIL 03/09/2023**

filling in the Google Form is strictly required



<https://forms.gle/cXSw9v1sWBoTEmmTA>

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TUESDAY, SEPTEMBER 12TH - Rome, Sapienza University, Department of Earth Sciences

Time	Speakers	Topics
10:00 – 10:30	Prof. Gianni Andreozzi, Prof. Gabriele Scarascia Mugnozza, Prof. Francesca Bozzano	Event opening and institutional greetings
Session 1: Local seismic response <i>convener Prof. Francesca Bozzano (Sapienza University of Rome, Italy)</i>		
10:30 – 11:30	Salvatore Martino (<i>Professor at Dept. of Earth Sciences at Sapienza University of Rome, Italy</i>)	Engineering-geological models for seismic response
11:30 – 12:30	Sebastiano D'Amico (<i>Head of Department of Geosciences at the University of Malta, Malta</i>)	Geophysical investigations and monitoring techniques
12.30 – 14.00	<i>Lunch break</i>	
Seminar: Introduction to the historical risk maps <i>convener Prof. Gabriele Scarascia Mugnozza (Sapienza University of Rome, Italy)</i>		
14:00 – 14:30	Renzo Carlucci (<i>Project manager at ALMA Sistemi S.r.l., Italy</i>)	Historical development of cultural heritage risk maps
Session 2: Seismic behavior of masonry structures <i>convener Prof. Gabriele Scarascia Mugnozza (Sapienza University of Rome, Italy)</i>		
14:30 – 15:30	Vasilis Sarhosis (<i>Professor of Resilient Structures and Infrastructure at the University of Leeds, UK</i>)	Improve the inspection and assessment of historic masonry structures using Machine Learning and High-Fidelity Models
15:30 – 16:00	Petros Christou/Prof. Paris Fokaides (<i>Professors at the Dept. of Civil Engineering at Frederick University, Cyprus</i>)	Masonry Structures: Modeling and Vulnerability

WEDNESDAY, SEPTEMBER 13TH - Rome, Sapienza University, Department of Earth Sciences

Time	Speakers	Topics
Session 3: Protective interventions on cultural heritage sites <i>convener Prof. Salvatore Martino (Sapienza University of Rome, Italy)</i>		
10:00 – 11:00	Haris Saroglou (<i>Dept. of Geotechnics, School of Civil Engineering National Technical University of Athens, Greece</i>)	Protection of Cultural Heritage sites from rock slope instabilities, examples from Greece
11:00 – 12:00	Sebastiano Rampello (<i>Professor of Geotechnical Engineering, Sapienza University of Rome, Italy</i>)	Cultural Heritage monitoring in urban areas
12:00 – 13:00	Maurizio De Angelis (<i>Professor at Dept. of Structural and Geotechnical Engineering at Sapienza University of Rome, Italy</i>)	Anti-seismic solutions in historical-monumental areas
13.00 – 14.00	<i>Lunch break</i>	
Session 4: Monitoring of Cultural Heritage sites <i>convener Prof. Stefano De Angeli (Tuscia University, Italy)</i>		
14:00 – 14:30	Dimitris Alexakis (<i>Researcher at the Institute for Mediterranean Studies Foundation for Research and Technology Hellas, Greece</i>)	Using Interferometry Techniques for mapping ground motions in urban environments
14:30 – 15:30	Marco Savoia (<i>Director of the Interdepartmental Center for Industrial Research on Building and Construction, Professor at the University of Bologna, Italy</i>)	Italian guidelines on the satellite interferometric monitoring to infer structural behavior of buildings
15:30 – 16:00	Paolo Mazzanti (<i>Professor at Dept. of Earth Sciences at Sapienza University of Rome, Italy</i>)	Remote monitoring of cultural heritage in Italy
Presentation of "STABLE" WebGIS Platform <i>convener Prof. Stefano De Angeli (Tuscia University, Italy)</i>		
16:00 – 16:30	Stavros Chlorokostas (<i>Researcher at GEOSYSTEMS HELLAS S.A., Athens, Greece</i>)	STABLE WebGIS Platform

VENUE

The lessons will be held at the Department of Earth Sciences of Sapienza University of

📍 **Address:** Piazzale Aldo Moro 5, 00185 Rome, Italy

📍 **Building:** CU005 (Mineralogia)

📍 **Room:** Aula Lucchesi, ground floor

HOW TO REACH US



THURSDAY, SEPTEMBER 14TH - Rieti

Time	Location	Event
10.30 – 12.30	University of Rieti	Workshop: SIS-DAT (in Italian language)
13.00 – 14.30		<i>Lunch break</i>
14.30 – 17.30	Rieti city center	Field Trip of STABLE project

Important to know:

- the transport to Rieti will be organized only for the participants of the STABLE project;
- the lunch of 14th September in Rieti will be offered only for the participants of the STABLE project.

VENUE

The event SIS-DAT will be held at Rieti University

📍 **Address:** Via Cintia, 106, 02100 Rieti, Italy

📍 **Building:** Main Entrance

📍 **Room:** TBD



Get in Touch

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