



**HSAcademy**

## 2nd Training Camp

June 26th - 30th, 2023

ITAM CAS

Telč UNESCO World Heritage Site  
Czech Republic

Organized by  
Institute of Theoretical and Applied Mechanics  
of the Czech Academy of Sciences



In cooperation with French  
Laboratoire de Recherche des Monuments Historiques  
of the Centre de recherche sur la conservation



# 2nd HS Academy Training Camp

## Built Heritage in Changing Environment

The Institute of Theoretical and Applied Mechanics of the Czech Academy of Sciences (ITAM CAS) with LRMH is organizing the 2nd IPERION HS Academy Training Camp, which is to be held at the Centre Telč of ITAM CAS (Telč, Czech Republic) from June 26 to June 30 2023.

### For whom

The 2nd Training Camp is open to a wide audience interested in learning complexity of built heritage including relevant diagnostics and other scientific techniques. The places are limited to 25 attendees, who will be selected by the HS Academy Training Camp team from the candidate applications based on merits, background and other criteria.

### What it is

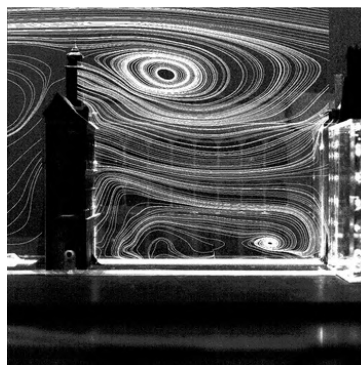
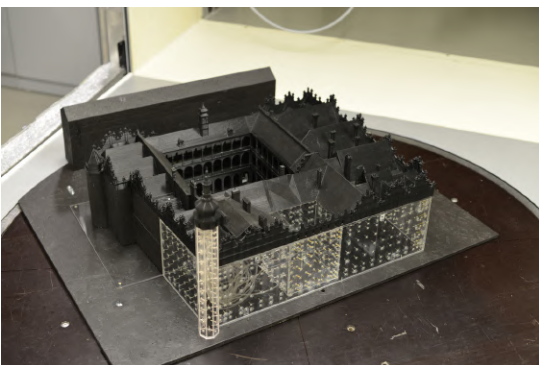
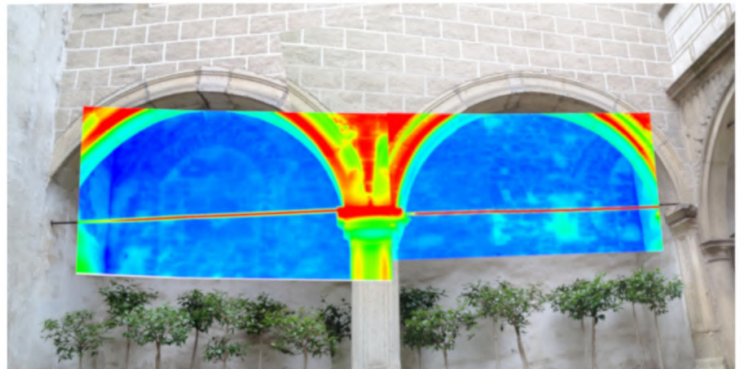
The 2nd Training Camp is an excellent opportunity for hands-on experience on the complexity of built heritage and principles, use and applications of selected infrastructure and scientific techniques provided by ITAM CAS and selected Molab tools of LRMH.



## Goals and structure

The 2nd Training Camp will offer an experience with the complexity of built heritage and will introduce the cutting-edge tools for diagnostics and methods of investigation applied to it. During the five intensive days of lectures and hands-on experience based on a problem-solving approach, trainees will learn how to apply selected advanced diagnostic and documentation methods, how to approach protection of built heritage and how to experimentally verify and monitor the effects of climatic phenomena on built heritage.

The 2nd Training Camp will last 5 days and will be structured in general lectures and hands-on activities on specific case studies, including on-site sessions and laboratory experiments. The case studies will be addressed in smaller interdisciplinary groups. The training foresees direct interaction with the reference expert scientist for each technique/method, encouraging thorough discussions and contributive debate among participants.



# Programme

## Sunday, 25th June: Arrival to Telč

The possibility of joint transport from Prague to Telč (approx departure 17:00)

## Monday, 26th June: Introduction

9:00-10:00: Registration

10:00-10:30: Welcome and opening of the course

10:30-11:00: Role of research infrastructure in heritage science and cultural heritage management (lecture by M. Drdáců)

11:00-11:45: Support of Heritage Science to World Heritage Property management (lecture by T. Drdáců)

11:45 - 12:15: Studying the behaviour of historic roofs using an innovative combination of remote and in situ sensing technologies (lecture by J. Cassar and E. M. Azzopardi )

12:15-14:00: Lunch

14:00-16:15: Tour of Telč cultural heritage assets

16:15-16:30: Coffee break

16:30-17:30: Discussion and wrap-up

## Tuesday, 27th June: Selected MOLAB tools of ITAM CAS

9:00-9:05: Welcome

9:05-12:15: Theory block:

Heritage Science and Changing Environment

Selected methods for in-situ investigation of historical materials

Monitoring and testing of historical buildings and structures

12:15-14:00: Lunch

14:00-17:30: Parallel on-site case studies



## Wednesday, 28th June: Selected MOLAB tools of LRHM

**9:00-9:05: Welcome**

**9:05-10:30: Theory - THz Imaging, Infrared Thermography, Raman spectroscopy, Portable permeametry, TDR, etc.**

**10:30-10:45: Coffee break**

**10:45-12:15: Parallel on-site case studies**

**12:15-14:00: Lunch**

**14:00-17:30: Parallel on-site case studies**

## Thursday, 29th June: X-Ray CT/Climatic Wind Tunnel

**9:00-9:05: Welcome**

**9:05-10:30: Theory - X-ray computed tomography and cultural heritage**

**10:30-10:45: Coffee break**

**10:45-12:15: Theory - Climatic wind tunnel modelling and testing of historical buildings**

**12:15-14:00: Lunch**

**14:00-17:30: Parallel lab case studies**





## Friday, 30th June: results and closing session

9:00-9:05: Welcome

9:05-10:35: Science for Conservation and Digital Story-Telling: Application to the Scientific Examination of the UNESCO site of North Korean hypogean Koguryo Cave Mural Paintings (lecture by Rocco Mazzeo)

10:35-11:00: Coffee break

11:00-12:30: General wrap-up discussion with attendees + Delivery of certificates of attendance

12:30-13:30: Lunch

13:30 Departure (possibility of joint transport to Prague)

## Speakers & staff involved

Jiří Bláha (Construction history)

Didier Brissaud (IRTF, Raman)

July Desarnaud (Conservation)

Miloš Drdácký (Heritage Science)

Tomáš Drdácký (UNESCO)

David Giovannacci (NdT)

Emilie Huby (Geosciences)

Rocco Mazzeo (Chemistry for CH)

Yannick Mélinge (Fluid characterisation)

Stanislav Pospíšil (CWT)

Arsenii Trush (CWT)

Shota Urushadze (Seismicity)

Jaroslav Valach (In-situ investigations)

Michal Vopálenský (microCT)

Stanislav Pospíšil (Director, ITAM)

Jakub Novotný (Director, CET ITAM)

Alina Kloiberová (Assistant)



# 2nd HS Academy Training Camp

## Built Heritage in Changing Environment

The Institute of Theoretical and Applied Mechanics of the Czech Academy of Sciences (ITAM CAS) is organizing the 2nd IPERION HS Academy Training Camp, which is to be held at the Centre Telč of ITAM CAS (Telč, Czech Republic) from June 26 to June 30 2023.

**Centre Telč** (CET) is a part of the [Institute of Theoretical and Applied Mechanics of the Czech Academy of Sciences](#). CET was established for realizing research on historic and other materials and structures. Its research infrastructure includes unique equipment designed specifically not only for obtaining fundamental knowledge of investigated objects, but also for verification and testing of new and innovative approaches and techniques being developed. The application domain encompasses fields like diagnostics, life cycle extension, preventive protection and conservation, including long-term sustainable use of existing building stock and materials. CET consists of Climatic and Boundary Layer Wind Tunnel, unique high-resolution X-ray micro- and nano-tomography laboratory, laboratory of material analysis and mobile diagnostic laboratory for specific assignments related to conservation of cultural heritage in emergency situations.

The 2nd IPERION HS Academy Training Camp is organised in cooperation with the French Laboratoire de Recherche des Monuments Historiques of the Centre de recherche sur la conservation

[Laboratoire de Recherche des Monuments Historiques \(LRMH\)](#) is a service with national competence of the [Ministry of Culture \(SCN\)](#). It is part of the [Centre de recherche sur la conservation \(CRC\)](#), a team associated with the UAR 3224 of the Centre national de la recherche scientifique (CNRS), which also includes the Centre de recherche sur la conservation des collections (CRCC) and the Conservation-Research of the Musée de la musique. LRMH is responsible for conducting scientific and technical studies and research on the conservation of buildings and objects of cultural heritage protected as Historic Monuments. It studies the constituent materials and the alteration phenomena that compromise their conservation. It works on the treatments to be applied to altered works, as well as on the conditions of conservation of the monuments and objects studied. It disseminates the results of his studies and research as widely as possible.

Profiles are available at:  
<https://www.itam.cas.cz>  
<https://www.lrmh.fr/>



## Practical information

### Venue

The 2nd IPERION HS Training Camp will be held at Centre Telč, ITAM CAS, in UNESCO World Heritage Site Telč.



Batelovska 485,  
58856 Telč,  
Czech Republic

### Schedule

The Training Camp will start on Monday **June 26th** and will end on Friday **June 30th**.

### Fee

The HS-TC participation costs are fully covered by the IPERION HS project, but a **fee of 50 €** will be paid to cover course materials and related transfer costs.

Travel expenses, subsistence and hotel accommodation expenses are not included and must be covered by each participant.

### Covid-19

Currently, there are no Covid-19 restrictions applied in the Czech Republic.

For further information, please contact



[novotny@itam.cas.cz](mailto:novotny@itam.cas.cz)  
[co@iperionhs.eu](mailto:co@iperionhs.eu)





## Registration

The application deadline is **April 30th, 2023**.

Successful candidates will be informed of their acceptance by **May 15th, 2023**.

To register, follow the link:

<https://www.eventbrite.it/e/2nd-hs-academy-training-camp-tickets-511447452097>

## Certificate of attendance

A certificate of attendance will be provided to all the participants.



## Organizing committee

**Jakub Novotný** - Institute of Theoretical and Applied Mechanics of the Czech Academy of Sciences, Telč (CZ)

**Miloš Drdäcký** - Institute of Theoretical and Applied Mechanics of the Czech Academy of Sciences, Prague (CZ)

**David Giovannacci** - Laboratoire de Recherche des Monuments Historiques (FR)

**Rocco Mazzeo** - University of Bologna (IT)

**Jana Striova** - IPERION HS Coordination Office

**Laura Benassi** - IPERION HS Communication Office

**Antonina Chaban** - IPERION HS Coordination Office

## Scientific committee

**Rocco Mazzeo** - University of Bologna (IT)

**Adam Gibson** - University College London (UK)

**Matija Strlič** - University of Ljubljana (SI)

**JoAnn Cassar** - University of Malta (MT)


**Elizabeth Muscat Azzopardi** - University of Malta (MT)

**Ralf Kilian** - Fraunhofer Institut für Bauphysik IBP (DE)

**Mark Sier** - Department of Earth Sciences, University of Oxford, Oxford (UK)

**Gill Campbell** - Historic England (UK)

Views and opinions expressed are however those of the authors only and do not necessarily reflect those of the European Union. Neither the European Union can be held responsible for them.





## How to get to Telč



### By bus

If interested, a joint bus transport from Prague to Telč and back will be organized for the participants. Telč can be reached by public bus lines from Prague and Brno:

<https://idos.idnes.cz/en/vlakyautobusymhdvse/spojeni/>



### By train

You can get to Telč by train from Prague and Brno with several transfers:

<https://idos.idnes.cz/en/vlakyautobusymhdvse/spojeni/>



### By plane

The nearest airports are Prague (CZ), Brno (CZ) and Vienna (AT).



**HS Academy**

<http://www.iperionhs.eu/academy-events/>

