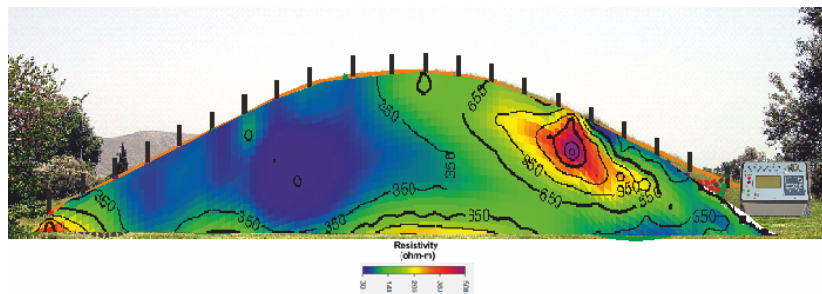
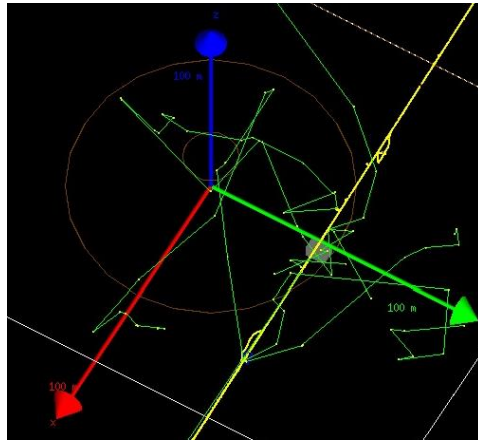


SYMPOSIUM

EKATY: Innovative imaging of the subsurface of archaeological sites and the interior of structural elements of monuments in 3 and 4 Dimensions



**Thessaloniki,
Monday, 8 November 2021**

Venue: Aristotle University Research Dissemination Centre, known as KEDEA Building (the Red Building). 3rd Septemvriou str.



Organizers:

- **Aristotle University of Thessaloniki (AUTH)**
 - *Exploration Geophysics Lab.*
 - *Lab of Atomic and Nuclear Physics*
- **European Gravitational Observatory (EGO)**
- **Laboratoire d'Annecy de Physique des Particules (LAPP CNRS-IN2P3)**
- **Institut de Physique Nucleaire de Lyon**
- **Hellenic Ministry of Culture and Sports (Ephorates of Antiquities of Thessaloniki City, Thessaloniki Region, Kavala, Drama, Rhodope and Evros)**

CONFERENCE PROGRAM

8:30 – 09:30 Conference registration

09:30-10:00 **Welcome address Opening Remarks: Prof. G.N. Tsokas (AUTH), Prof. D. Sampsonidis (AUTH), Prof. St. Katsanevas (EGO), Dr. Yannis Karyotakis (LAPP CNRS-IN2P3), chairman of the School of Geology, Prof. N. Papaioannou (Rector of AUTH)**

10:00-10:15 **Innovations in imaging of the subsurface of archaeological sites and the interior of structural elements of monuments in 3 and 4 Dimensions developed in the framework of the EKATY project**
Grigorios N. Tsokas

10:15-10:30 **Opening: Minister of Culture and Sports, Dr. L. Mendoni**

10:30-11:00 Coffee Break

Session 1 (11:00-12:30): GEOPHYSICAL IMAGE FUSION **Chairman: Dr. G. Didaskalou (General Secretary of the Ministry of Culture and Sports)**

11:00-11:15 **The image fusion methods developed for EKATY**
Alexandra Karamitrou

11:15-11:30 **Image Fusion of the visualizations of different data in Philippi in N. Greece**
Grigorios N. Tsokas, Alexandra Karamitrou, Dimitrios Kaimaris, Stavroula Dadaki, Alexandros Stampolidis, George Vargemezis, Panagiotis Tsourlos and Elias Fikos

11:30-11:45 **SMART EYE - Development of a Prototype for Smart Visualization of Invisible Antiquities: The First Results.**
Dimitrios Kaimaris, Triantafyllos Roustanis, Petros Patias

11:45-12:00 **Curvelet-Transform-Based Fusion: Application to Europos and Doriskos, N. Greece.**
Alexandra Karamitrou, Gregory N. Tsokas, Alexandros Stampolidis, Georgia Stratouli, Chrysoula Karadima

12:00-12:30 Coffee Break

Session 3 (12:30-13:15): GEOPHYSICAL MONITORING OF MOISTURE CHANGES AND FAILURES EVOLUTION IN THE ELEMENTS OF STANDING MONUMENTS

Chairwoman: Georgia Zacharopoulou (Greek Ministry of Culture)

12:30-12:45 3D electrical resistivity tomography (ERT) monitoring in the Thessaloniki Rotunda: looking for moisture changes into the pillar's interior.

Prodormos Louvaris, Panagiotis Tsourlos, George Vargemezis, Konstantinos Polydoropoylos, Elias Fikos, Nectaria Diamanti and Georgia Zacharopoulou

12:45- 13:00 Ancient monuments' wall prospection with GPR: examples from Agia Sofia Dramas and other locations

Nectaria Diamanti, Alexandros Stampolidis, Vassiliki Poulioudi, Grigorios N. Tsokas,

13:00-13:15 Geophysical investigation at the main tower of Heptapyrgion of Thessaloniki: Problem setting, Survey and assessment.

Georgia Zacharopoulou, Dimitrios Angelis, Panagiotis Tsourlos

13:15-14:30 Lunch Break

Session 2 (14:30-16:30): MUON TOMOGRAPHY AND GEOPHYSICAL INVESTIGATIONS OF THE INTERIOR OF TUMULI

Chairman: Prof. S. Katsanevas (Director: European Gravity Center), Prof. Jacques Marteau (Institut de Physique des 2 Infinis de Lyon)

14:30-14:45 A brief report on the regional history of ancient Apollonia. A testimony of the findings.

Magdalini Valla

14:45-15:00 Muon tomography: The Apollonia Experiment

Jacque Marteau

15:00- 15:15 Feasibility study of muon tomography application in a non-invasive representation of tumulus

Iliá Kalaitzidou, Chara Petridou and Dimitrios Sampsonidis

15:15-15:30 First results on muon tomography application with a test-bench cosmic-ray telescope of micromegas detectors

Christos Lampoudis, Chara Petridou and Dimitrios Sampsonidis

15:30-15:45 Testing different 3D Electrical Resistivity Tomography survey modes for tumulus prospection: application at the and the great tumulus of Apollonia.
Panagiotis Tsourlos, Grigorios N. Tsokas, George Vargemezis

15:45-16:00 Seismic tomography code and the seismic experiment at the great tumulus of Apollonia.
Petros Bogiatzis, George Vargemezis, Ilias Fikos, Eftychia Amanatidou, Nikolaos Kordatos, Prodromos Louvaris and Konstantinos Polydoropoulos

16:00-16:15 Gravity Survey of the great tumulus of Apollonia.
Alexandros Stampolidis, Dimitrios A. Natsiopoulos, George Vergos, Ilias N. Tziavos, and Grigorios N. Tsokas.

16:15-16:30 Muography of the Apollonia tumulus: Data and simulation comparisons
I. Karyotakis

16:30-17:00 Coffee Break

Session 4 (17:00-17:30): ROUND TABLE ARCHAEOLOGICAL PROSPECTION AND ARCHAEOLOGY