



**Call for students to participate to the  
Corinth Rift Laboratory School 2021**

# **CRL School 2021**

## **Corinth Rift Observatory**



Dear Student/Teacher,

In the wider region of the Corinthian Gulf, a concerted effort is taking place for more than 30 years, for the advancement of understanding of geophysical processes (e.g. earthquakes, landslides, tsunamis). Over time, extensional deformation rates of up to 15 millimeters per year are observed, between the North and South coast of the Corinthian Gulf, a phenomenon unique in Europe and worldwide for areas beyond tectonic boundaries. A part of the onshore North Corinthian Gulf (coastal areas of southern Fokida) is subsiding and the South (coastal areas of northern Achaia) is uplifted. In the Corinthian Gulf, large and destructive earthquakes have been reported since the antiquity, with the most recent being the earthquake of Aigio in 1995. Recently, a seismic crisis occurred in the area which was

studied in detail by the CRL team. The crisis progressed in three stages: it started with an earthquake of a Mw4.6 magnitude near the north shore of the gulf, opposite of Aigio, then migrated east to Trizonia after an earthquake of a Mw5.0 magnitude and peaked with an earthquake of Mw5.3 about 3km northeast of the Psathopyrgos fault. The area is being studied by research teams from all over Europe.

For the complete and most thorough study, a large number of instruments (seismometers, accelerometers, geodetic GPS receivers, etc.) have been installed, equipped with telemetry and are fully operating in real-time. Furthermore, about 40 seismographs, 30 permanent geodetic stations have been installed in the area from Lefkada to Galaxidi (north) and Kefalonia to Aigio (south). Seismological stations that record ground motion and GNSS geodetic stations that measure ground deformation are exploited to better understand the geo-tectonic background of the wider region in detail.

At the same time, data from earth observation satellites with frequent acquisition are being obtained. Terrestrial and satellite observations are exploited in research projects and studies that cover many scientific fields and lead to an in-depth understanding of the geophysical processes take place.

A common site of research activities in the area is the Corinth Rift Laboratory (CRL). Its members are Universities and Research Institutes from Greece, the National and Kapodistrian University of Athens, the National Observatory of Athens, the University of Patras and the Harokopio University of Athens. From the French side, the École Normale Supérieure, the Universities of Paris, Nice, Strasbourg, Savoie Mont Blanc and the Institut de Physique du Globe de Paris. The University of Prague is also a member. The Corinthian Gulf has been included within the framework of the pan-European observation infrastructure of the Eurasian Tectonic Plate (EPOS program) as a Near Fault Observatory.

In 2016, the 1<sup>st</sup> CRL School was held and since then it is organized in a yearly basis.

The aims of the school are:

- Students with different backgrounds from different universities, to get acquainted with the research and related activities carried out in the scientific fields of Seismology, Geophysics and Geology, especially for the natural laboratory of the Corinthian Gulf
- To bring the research/university community together with secondary school teachers to enrich their knowledge in the thematic fields aiming to more efficient and targeted training
- To disseminate popular knowledge about the thematic areas to the public and the local authorities
- To intensify the osmosis and collaboration among professors/researchers from different scientific fields on the thematic objectives of the Gulf of Corinth Observatory

The school activities are:

- Introduction to the science of seismology and seismicity in the Corinthian Gulf with presentations of professors / researchers as well as students and teachers of secondary education.

- Instrumental measurement of seismicity and visits to seismological stations in the area.
- Measurement of ground deformation by geodetic GPS, field work and visiting GPS station of the area.
- Measurement of ground deformation by satellite microwave radar (SAR interferometry, SENTINEL mission, GEP-TEP and its application to the CRL), with presentations also in the laboratory.
- Geological observations (geotectonic, geomorphology, coastal and marine geology) on- and off-shore, decoding the knowledge that they provide us.
- Seismic Hazard and Seismic Risk and Impact on Engineering Geology, the case of the Rio - Antirion Bridge

The 6th CRL School will be held on October 1<sup>st</sup> to 3<sup>rd</sup>, 2021. Due to the special circumstances imposed by covid-19 restrictions, this year's school will also be conducted via teleconference. Thus, it is self-evident that certain activities that are a special feature of this school i.e. the demonstration of measuring stations in the classroom and in the field, demonstration of an educational seismological station, geological observations, laboratory measurement processing classes and joint exercises in the field will not be performed. Instead, the 6<sup>th</sup> CRL school will include presentations / lectures and discussions with distinguished scientists to the participating students and teachers of secondary education.

The school, since it is going to be via telecom, will be addressed to undergraduates - postgraduate students and PhD candidates, along with secondary education teachers.

This year, the students and teachers of secondary education will have the opportunity to make a brief presentation of a relevant topic that they have dealt with and to suggest its possible application within the framework of this Laboratory. Due to limited time, 12 students and 6 secondary school teachers will be selected.

A certificate of attendance will not be given this time. However, participants of CRL School 2021 will not be excluded from their participation in the next school, when this will be conducted in its normal character.

The number of participants won't be limited as in the past CRL Schools, yet the participants will be selected based on their academic record and their motivation (as described in the participation form).

Information about the CRL, as well as the complete program and material for the past schools can be found at the link <http://crlab.eu>.

For further information, you can also contact Annita Panteleli by e-mail: [apanteleli.crl@gmail.com](mailto:apanteleli.crl@gmail.com)

Applications are accepted from August 9<sup>th</sup> to September 20<sup>th</sup> 2021.

Interested parties can sign up using the following links:

Student's Subscription:

[https://docs.google.com/forms/d/1\\_RvPlwA38NVlgcXwA0Lt4R8DRL4M7ci8sqMPe50ibwU](https://docs.google.com/forms/d/1_RvPlwA38NVlgcXwA0Lt4R8DRL4M7ci8sqMPe50ibwU)

Teacher's Subscription:

<https://docs.google.com/forms/d/1gKJ-nqBJjrewO4APaFPPwJJOWeERUtohNsTYKrsTeY4>

The scientific committee of CRL School