



**Joint IAG Commission 2, IGFS and GGOS**

**SYMPOSIUM ON**

**GRAVITY, GEOID AND HEIGHT SYSTEMS 2024**

**4-6 SEPTEMBER 2024**

THESSALONIKI, GREECE

[www.gghs2024.com](http://www.gghs2024.com)



## INTRODUCTION

The GGHS2024 “Gravity, Geoid and Height Systems 2024” Symposium will be held in Thessaloniki, Greece, from 4 to 6 September 2024. It focuses on methods for observing, estimating and interpreting the Earth’s gravity field and the essential role of gravity field modelling in measuring, understanding and predicting changes in the Earth system.

GGHS2024 continues the long history of IAG gravity field related symposia, initially hosted by the IAG Commission 2 (Gravity Field):

GGG2000 (Banff, Canada), GG2002 (Thessaloniki, Greece), GGSM2004 (Porto, Portugal), GGEO2008 (Chania, Greece), GGHS2012 (Venice, Italy),

those organized by the International Gravity Field Service (IGFS):

1st IGFS Meeting 2006 (Istanbul Turkey), 2nd IGFS Meeting 2010 (Fairbanks, Alaska, USA), 3rd IGFS Meeting 2014 (Shanghai, China).

And more recently the joint IAG Commission 2 and IGFS Symposia:

GGH2016 (Thessaloniki, Greece), GGHS2018 (Copenhagen, Denmark) and GGHS2022 (Austin, Texas).

On this occasion, GGHS2024 is co-organized by the IAG’s Global Geodetic Observing System (GGOS).

More information on the conference sessions, venue, and hosting city along with important dates for abstract submission, registration, trip and visa arrangements can be found in the symposium website at <http://www.gghs2024.com>.

## **SUBJECTS - THEMES**

During the last decade, geodesy in general and gravity field modelling in particular, have experienced a notable growth in their recognition and end-product use by many scientific disciplines.

This was mainly due to the advent of the dedicated legacy satellite gravity missions of CHAMP, GRACE and GOCE, which have brought new insights to both the static and time-variable representations of the Earth's gravity field. GRACE Follow-On has seamlessly integrated with the 15-year GRACE data record and has become indispensable for a wide variety of geophysical process and climate studies. New mission concepts, like NGGM, new accelerometers for satellite gradiometry, cold atom gravimetry, and new and enhanced processing technologies, shall substantially improve this knowledge with further increased spatial and temporal resolution. Moreover, the continuous availability of altimeters on-board satellites and the improvements in the representation of the marine geoid have provided higher accuracies to shorter spatial scales of the marine

geoid and gravity field, ocean topography and circulation as well as the structure of the oceanic crust.

At the time came advancements in traditional terrestrial, airborne, UAV and shipborne gravity instrumentation, which offer considerable improvements in gravity networks and the monitoring of gravity variations. Absolute quantum gravimeters have emerged and are gradually replacing free-fall corner cube ones, concepts on quantum sensors are investigated as future payloads for gravity dedicated space missions, while results from gravimeters based on MEMS and airborne sensors on UAVs are emerging.

Another major breakthroughs for the gravity and geoid community have been the definitions of the International Height Reference System (IHRF) as well as the International Terrestrial Gravity Reference System (ITGRS) and the development of their practical realizations, the International Height Reference Frame (IHRF) and the International Terrestrial Gravity Reference Frame (ITGRF). Concepts for gravity, geoid and potential determination have been developed and tested aiming at providing a roadmap for the definition and realization of physical heights and gravity reference into a worldwide frame. Both definitions lead to the linkage of local vertical and gravity datums to a global one, which is fundamental for monitoring sea level variations, as well as engineering and hydrological and cryosphere studies.

The collocated use of the new datasets and models offered by gravity-field related research improves the knowledge of the Earth system, its sub-systems, coupling processes among them, which are important indicators for climate change. They provide the building blocks for innovative investigations of the solid Earth giving new details of crust and mantle and their variation in time.

Contributions on methods for observing, modelling and interpreting the Earth's gravity field, the determination of the geoid, the establishment of physical height systems, and the essential role of gravity field modelling in measuring, understanding and predicting changes in the Earth system are welcomed for presentation at the GGHS2024 Symposium.

## **GGHS2024 SESSIONS**

**Session 1:** Reference systems and frames in Physical Geodesy

**Session 2:** Novel technologies in terrestrial, airborne and satellite gravity field determination

**Session 3:** Static and time-variable global gravity field modelling

**Session 4:** Regional gravity field modelling and geophysical interpretation

**Session 5:** Gravity for climate, atmosphere, ocean and natural hazard research

**Session 6:** Data management, dissemination of results and networking of stakeholders

## **IMPORTANT DATES**

Feb. 12, 2024 – Apr. 28, 2024	Abstract Submission
Feb. 12, 2024	Early Registration Opens
May 31, 2024	Abstract acceptance notification
June 14, 2024	Early Registration
June 30, 2024	Session organization
July 07, 2024	Letter of schedule

# **COMMITTEES**

## **LOC**

George S. Vergos (Chair of the LOC)

Vassilios N. Grigoriadis

Dimitrios A. Natsiopoulos

Elisavet Mamagiannou

Anastasia Triantafyllou

Androniki Bai

## **Scientific Committee**

Srinivas Bettadpur (President Comm. 2)

Riccardo Barzaghi (President IGFS)

Georgios S. Vergos (Director IGFS CB, Chair SC2.2)

Laura Sanchez (GGOS President)

Przemysław Dykowski (Chair SC2.1)

David Wiese (Chair SC 2.3)

Hussein Abd-Elmotaal (Chair SC 2.4)

Wei Feng (Chair SC 2.6)

Mattia Crespi (President ICCT)

Sylvain Bonvalot (Director BGI)

Ince Sinem (Director ICGEM)

Mirko Reguzzoni (Director ISG)

Hartmut Wziontek (Director IGETS)

Kevin Kelly (Director IDEMS)

Adrian Jaeggi (Director COST-G)



## REGISTRATION AND PAYMENT

	Before or on June 14 <sup>th</sup> 2024	After June 14 <sup>h</sup> , 2024
<b>Regular registration</b>	450€	550€
<b>PhD Students*</b>	200€	250€
<b>Undergraduate and MSc students*</b>	50€	50€
<b>Accompanying Per- sons</b>	50€	50€

*\* A confirmation letter by the head of the Department, School, University is required. For PhD, MSc and Undergraduate student status verification, please send a copy of your student ID or a confirmation letter by the Head of the Department/School/University to the conference secretary (please fax to +30 2310 22 14 08 or e-mail a scan to [info@gghs2024.com](mailto:info@gghs2024.com)).*

### Regular and PhD registration fee

The fee includes:

1. Entry to all GGHS 2024 sessions, presentations, conference proceedings, related working material
2. Coffee and tea daily
3. Welcome Reception

4. Refreshments and finger food during poster sessions
5. Official dinner
6. Conference Proceedings at the IAGS Proceedings Series in Springer Nature  
(<https://www.springer.com/series/1345>)

### **Accompanying person's registration fee**

The fee includes:

1. Welcome Reception
2. Official dinner

### **Undergraduates and MSc students registration fee**

The fee includes:

1. Access to the conference
2. Coffee and tea daily

GGHS2024 is an official IAG meeting. Young scientists from IAG member countries may apply for the IAG Travel Award to assist them in presenting results of their research.

## **ABSTRACT SUBMISSION**

Thank you very much for your interest in the Joint IAG Commission 2, IGFS and GGOS Symposium – GGHS2024. Please follow the guidelines for the submission of your abstract as posted on the GGHS2024 website.

Abstracts can be revised any time until the deadline of April 28, 2024, through the abstract submission system. Note that a non-refundable abstract processing fee (APC) of 40 Euros is required for each abstract submission. Abstracts received after the deadline cannot be accepted and therefore will not be considered for the scientific program or publication in the conference proceedings. The acceptance/rejection of the abstract will be announced to authors via e-mail by May 31, 2024.

Abstract submission bears the obligation of the author or one of the authors in case of a joint work, to complete the GGHS2024 online registration before or on the early-bird registration deadline on June 14, 2024. If no registration has been received by that date for one of the abstract authors, then the abstract will not be considered by the respective session chairs and the conference scientific committee for inclusion in the GGHS2024 program.

For the abstract submission, please use the [Online Submission](#) system provided in the GGHS2024 website. The system will be open to submit your abstract on February 12<sup>nd</sup>, 2024. Abstracts cannot be submitted by fax and/or e-mail.

## Abstract Preparation

- Browse through the [session programme](#) and select the session of your interest to submit your abstract(s) to.
- Please use a WORD processor in preparing your abstract or other compatible software like, for example, LibreOffice. The abstract should have the following structure:
  - Title
  - Author(s)
  - Affiliation(s)
  - Main body of abstract
  - Keywords (please include 3-5 keywords)
  - Session the abstract is submitted to
  - Presentation preference
- Please use the WORD template file provided or follow the exact setting given in the PDF version of the template.
- Your abstract text should be 100–500 words.
- Please be as concise as possible, including the subject you want to tackle, the methods used and the main results achieved.
- Each abstract should be submitted as a WORD/PDF file using the [Online Submission](#) system provided in the GGHS2024 website. The system will be open to submit your abstract on February 12<sup>th</sup>, 2024.

## License and Copyright

The following licence and copyright agreement is valid for any GGHS2024 abstract.

### Author's certification

In submitting the abstract, the authors certify that:

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- They agree to the following license and copyright agreement:

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## VENUE

GGHS2024 will be hosted in the premises of the Aristotle University of Thessaloniki [Research Dissemination Center](#) (KEDEA). The Conference Center has three ultra-modern auditoriums, exhibition space of 300 sq.m. and public spaces ideal for hosting scientific conferences, symposiums and cultural events. GGHS2024 will use [Amphitheatres II and III](#) of the KEDEA building for the oral sessions and business meetings as well as the Foyer for the poster sessions.

The building is located downtown, on Tritis Septemvriou Str. at Aristotle University's campus between the Student Club and the University Gymnasium.

An important element of the architecture of the building is the characteristic red color, which makes KEDEA a new spatial reference point on the axis of Tritis Septemvriou Str.

The KEDEA building is connected with the following bus lines:

- 2, 7,14,58 Bus Stop University of Macedonia
- 17,24,37 Bus Stop Fititiki Leschi
- 10,31 Bus Stop Agia Foteini- University of Macedonia
- 27,28,83 Terma Grammis

## **ACCOMMODATION**

Participants are expected to book individually their accommodation. Thessaloniki offers a great variety of hotels in terms of prices and location.

Please note that demand for hotel rooms in Thessaloniki during GGHS2024 dates is very high. To avoid disappointment, early bookings are highly recommended.

NB EVENTS - GGHS2024 Official Organizer has negotiated special hotel rates for some of the best hotels in Thessaloniki. Please make your reservations by contacting directly these hotels mentioning the Reservation code: GGHS2024. A non-exhaustive list of hotels can be found in the GGHS2024 website under [Travel & Accommodation](#). The organizers are not involved in any manner in booking of hotels.

For more information please contact us:

### **Communication:**

EMAIL: [info@gghs2024.com](mailto:info@gghs2024.com)

TELEPHONE: +30-2310223461

FAX:+30-2310-221408

<http://nbevents.gr>

## OTHER INFO

- **Facilities.** Delegates of GGHS2024 may choose from a variety of restaurants in the close vicinity of the Congress venue.
- **Transportation.** The AUTH Research and Dissemination Center is in the heart of the City of Thessaloniki. Public bus and taxi services to and from the center of the city are provided on a 24h basis. A one - way bus ticket costs € 1.00, while taxi fees depend on the time of travel, traffic load, etc., but normally should not exceed € 15.00 for any route within the city limits. Bus route details and maps are available at [www.oasth.gr/en](http://www.oasth.gr/en).

It is expected that by the time of the conference the metro of Thessaloniki will be operating, having a metro station directly at the AUTH Research and Dissemination Center location (Station University).

- **Arrival by airplane.** Macedonia International Airport of Thessaloniki (airport code SKG) has daily connections to many major European destinations through scheduled services of a large number of international airlines. It is the second largest airport in Greece and is located 15 km away from the city centre with regular public bus connections. There are also some low-cost charter flights operating from European cities directly to Thessaloniki. An alternative option is to use the



low-cost carriers' flights operating to Athens and connect by train to Thessaloniki. Delegates are strongly recommended to book air travel as early as possible, as Greece is a busy tourist destination.

- **Arrival by train.** The city's railway station is the largest in Greece and is located very close to the city centre. There are international daily arrivals and departures from and to several destinations. It is served by a dense network of public bus transportation. Timetables and tickets are supplied by the (OSE) Hellenic State Railways Offices ([www.ose.gr/en](http://www.ose.gr/en), Thessaloniki office tel: +30 (231) 05.17.517).
- **Arrival by car.** Those wishing to drive to Greece may either ferry their cars across to one of the country's major ports (Igoumenitsa, Piraeus, Patras etc.) or enter the country overland. The mainland points of entry are Kakavia, Kristallopigi (Albania), Evzoni, Niki (FYROM), Promahonas (Bulgaria), Kastania and Kipi (Turkey). All border stations operate on 24 hour service basis.
- **Visas.** Greece is a member of the European Union; therefore no visa is needed for E.U. citizens. Non - E.U. participants should contact their nearest Greek Embassy or Consulate for further information. For a complete listing of Greek Embassies and Consulates abroad, including full contact information, you may visit the page of the Greek

Ministry of Foreign Affairs at [www.mfa.gr/en](http://www.mfa.gr/en). Those who require a formal invitation for the purpose of obtaining a visa, or raising travel funds in their country, may apply to NB Events ([info@gghs2024.com](mailto:info@gghs2024.com)).

- **Insurance.** Travel insurance and medical care, when needed, are solely under the responsibility of the participants.
- **Climate & Clothing.** Weather is usually pleasant in late August, but temperatures may sometimes reach above 25 °C. Generally, one should expect sunny and hot days, probably with high humidity, and perhaps cooler and most pleasant nights. But, with Thessaloniki being in Northern Greece, there is always the chance of an early Fall rain.

## USEFUL ADDRESSES

Some Internet addresses that might be of use to the participants:

- E-mail address of the GGHS2024 Meeting: [info@gghs2024.com](mailto:info@gghs2024.com)
- Public bus schedules, routes and maps: [www.oasth.gr/en](http://www.oasth.gr/en)
- Hellenic Railways: [www.ose.gr/en](http://www.ose.gr/en)