GGHS 2024

4-6 September 2024

Thessaloniki, Greece

PROGRAM

CONFERENCE

PROGRAM

GGHS 2024

4-6 SEPTEMBER 2024

THESSALONIKI, GREECE

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INFO

GGHS 2024

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Kevin Kelly (Director IDEMS)
Adrian Jaeggi (Director COST-G)

VENUE

GGHS 2024

Aristotle University Research Dissemination Center

DAY 0

Tuesday 03.09.2024

16:00-20:00 **GGHS2024 Registration and material pickup**

DAY 1

Wednesday 04.09.2024

8:00	**Registration**	

	ORAL BLOCK 1 | Opening Welcome by LOC, Com. 2, IGFS, GGOS **SESSION 5** Gravity for climate, atmosphere, ocean and natural hazard research **Chairs: Annette Eicker, Carmen Blackwood, Rebecca McGirr**	
8:30-8:45	Welcome by the LOC (George S. Vergos) Welcome by the IAG Commission 2 President (Srinivas Betadpur) Welcome by the IGFS President (Riccardo Barzaghi) Welcome by the GGOS President (Laura Sanchez)	
9:00	Canada 1 Water: Towards integrated gravity – water storage change models for regional and national scale monitoring (abstract)	John Crowley, Melissa Bunn, Steven Frey, Hazen Russell and Jianliang Huang
9:15	Enhancing the spatial resolution of TWS estimates by combining GRACE(-FO) and InSAR data (abstract)	Mehdi Joud and Ehsan Forootan
9:30	Separation of temporal gravity signals using standard statistical and neural network methods (abstract)	Betty Heller-Kaikov, Roland Pail and Martin Werner
9:45	MAGIC's ability to estimate the long-term trend in climate-related mass-transport signals (abstract)	Marius Schlaak and Roland Pail
10:00-10:30	**Coffee Break**	

	ORAL BLOCK 2 **SESSION 6** Data management, dissemination of results and networking of stakeholders **Chairs: Sinem Ince, Daniela Carrión, Martin Sehnal**	
10:30	GGOS Portal | The future Metadata Platform for Geodetic Data - Feasibility Study and Perspectives (abstract)	Martin Sehnal and Lena Steiner
10:45	Definition of Essential Geodetic Earth Observation Variables (EGVs) with Emphasis to the Earth Gravity Field (abstract)	Thomas Gruber, Detlef Angermann and Laura Sánchez
11:00	What is a DOI and why should I bother to use them? (abstract)	Kirsten Elger, Sinem Ince, Mirko Reguzzoni and Christian Voigt
11:15	Future Role of the ICGEM Service in the use and archiving of global gravity field data and related products via the SAMDAT project (abstract)	E. Sinem Ince, Christoph Förste, Kirsten Elger, Thomas Gruber and Sven Reißland
11:30	Hellenic Geodetic Networks (abstract)	Andreas Christopoulos, Charalampos Paraschou and Melissinos Paraskevas
11:45	The Greek National Small Satellite Programme and its Data Eexploitation Framework (abstract)	Konstantinos Karantzalos
12:00-14:00	**Lunch Break**	

ORAL BLOCK 3
SESSION 2

(Co-organized with the IAG QuGe Proect): Novel technologies in terrestrial, airborne and satellite gravity field determination

Chairs: Jürgen Müller, Derek van Westrum, Sylvain Bonvalot

14:00	Future satellite gravimetry: The quantum leap? (abstract)	Roland Pail, Philipp Zingerle and Thomas Gruber
14:15	Quantum Gravimetry in Space: How space debris will affect the gravity field recovery (abstract)	Barbara Jenny, Nina Fletling, Manuel Schilling, Nassim Zahzam, Rene Forsberg and Tim Enzlberger Jensen
14:30	Comprehensive In-orbit Performance Evaluation of Quantum Sensors for Future Satellite Gravity Missions and Space Navigation (abstract)	Alireza Hosseiniarani, Manuel Schilling, Quentin Beaufils, Annike Knabe, Benjamin Tennstedt, Alexey Kupriyanov, Steffen Schön, Franck Pereira dos Santos and Jürgen Müller
14:45	Evaluation of novel airborne gravity levelling methods for bathymetric and geological interpretation in polar regions (abstract)	Felix Johann, Hannes Eisermann, Antonia Ruppel and Graeme Eagles
15:00	Sensor fusion error and spectral analyses for airborne quantum gravimetry: the AeroQGrav case study (abstract)	Francesco Darugna, Henning Albers, Temmo Wübbena and Jannes Wübbena
15:15	Revisiting Non-Tidal Atmospheric and Hydrospheric Corrections for Terrestrial Gravimetry (abstract)	Kyriakos Balidakis, Ezequiel Antokoletz, Roman Sulzbach, Linus Shihora, Laura Jensen, Henryk Dobslaw, Hartmut Wziontek, Christian Voigt, Robert Dill and Ludger Timmen
15:30	LUH-JAQGM2024 Joint Measurements with Absolute Quantum Gravimeters at Leibnitz University Hannover (abstract)	M. Reich, H. Toss, Przemyslaw Dykowski, Marcin Sekowski, A. Gebauer, M. Sobh, J. Bergmann, N. Le Moigne, S. Merlet, N. Addi, L. Timmen, P. Rosenbusch, M. Arnal and P. Vermeulen
15:45	Clock-based unification for the realization of a global height system (abstract)	Asha Vincent and Juergen Mueller
16:00-16:30	**Coffee Break**	

16:30-18:00	**Short oral presentations of Session 2, 5 and 6 posters**
18:00-20:00	Poster Session S1+S2+S3+S4+S5+S6
20:00-22:00	Conference Welcome Reception 20:00 - 22:00

SHORT ORAL BLOCK 1
SESSION 2 - SESSION 5 - SESSION 6

Time Slot	Title	Authors	Poster ID
Session 2 **Chairs: Jürgen Müller, Derek van Westrum, Sylvain Bonvalot**			
16:30 - 16:50	Cold Atom Interferometry Accelerometers for Future Satellite Gravity Missions (abstract)	Annike Knabe, Manuel Schilling, Mohsen Romeshkani, Alireza Hosseiniarani, Nina Fletling, Alexey Kupriyanov, Jürgen Müller, Quentin Beaufils and Franck Pereira dos Santos	SOP02-01
	CARIOQA-PMP: preliminary results of post-pathfinder mission scenarios simulations in context with Earth observation user needs (abstract)	Katharina Lechner, Thomas Gruber and Roland Pail	SOP02-02
	CubeSat Constellation and Gravimetry Mission Design using Full-Scale Simulations in the Context of the novel DORT-IM Ranging System (abstract)	Matthew Darrow, Thomas Gruber, Roland Pail, Elisabeth Paul and Bastian Eder	SOP02-03
	Future satellite gravimetry with a network of miniaturized satellites (abstract)	Nikolas Pfaffenzeller, Roland Pail, Jonas Jensen, Prachit Vijay Kamble, Tanuja Datar, Alexander Kleinschrodt and Klaus Schilling	SOP02-04
	Strapdown airborne gravimetry with focus on geophysical applications (abstract)	Vadim Vyazmin and Andrey Golovan	SOP02-05
16:50 - 17:10	Scale factor (in)stability of ZLS-B78 - a worst case scenario? (abstract)	Christian Gerlach	SOP02-06
	CG-5 Processor: A MATLAB-based GUI to process Scintrex CG-5 gravity data (abstract)	Rafailia-Maria Mavromatidou, Elisavet-Maria Mamagiannou, Dimitrios Natsiopoulos and George Vergos	SOP02-07
	GravTools: An open source software for the analysis of relative gravity surveys (abstract)	Andreas Hellerschmied	SOP02-08
	Field and laboratory investigations of the A10-020 portable absolute gravimeter for the Finnish First Order Gravity Net (abstract)	Jaakko Mäkinen, Marcin Sękowski, Przemysław Dykowski, Kaj Nyholm, Mirjam Bilker-Koivula, Jaakko Kuokkanen, Jyri Näränen, Arttu Raja-Halli, Hannu Ruotsalainen and Heikki Virtanen	SOP02-09
	Theoretical Application of Chronometric Levelling: A qualitative and quantitative accuracy analysis (abstract)	George Pantazis and Nikolaos Kanellopoulos	SOP02-10
Session 5 **Chairs: Annette Eicker, Carmen Blackwood, Rebecca McGirr**			
17:10 - 17:30	Estimation of gravimetric contributions to sea level change in the Baltic Sea and prediction with Deep learning method (abstract)	Fenghe Qiu, Roland Pail and Thomas Gruber	SOP05-01
	Altimetry Data Analysis for Coastal Erosion: A Time Series Approach (abstract)	Rafailia Adam and George Vergos	SOP05-02
	Analysis of Extreme Flood Events Using GRACE-FO and SAR Data: A Case Study of Short-Term Flood in Thessaly, Greece (abstract)	Anastasia Triantafyllou, Elisavet Maria Mamagiannou, George Vergos and Eleni Tzanou	SOP05-03

Time Slot	Title	Authors	Poster ID
	Session 6 **Chairs: Sinem Ince, Daniela Carrión, Martin Sehnal**		
17:10 - 17:30	GGOS: The Global Observing System of the International Association of Geodesy (abstract)	Laura Sanchez, Anna Riddell, José Rodríguez, Detlef Angermann, Martin Sehnal, Martin Lidberg, Thomas Gruber, Benedikt Soja, Michael Schmidt, Timothy Melbourne, Richard Gross, José M. Ferrandíz, Allison Craddock, Basara Miyahara, Georgios Vergos and Claudia Tocho	SOP06-01
	The Global Geodetic Observing System: Facilitating Opportunities for Strategic Outreach, Collaboration, and Engagement with External Stakeholders (abstract)	Allison B. Craddock, Richard S. Gross, Martin Sehnal, José C. Rodríguez, Detlef Angermann, Laura Sánchez and Athina Peidou	SOP06-02
17:30 - 18:00	Recent activities of the International Service for the Geoid and implementation of a new database for regional geoid models (abstract)	Mirko Reguzzoni, Lorenzo Rossi, Nicolò Zambon, Daniela Carrion, Juan Fernando Toro Herrera, Khulan Batsukh, Alberta Albertella, Kirsten Elger and Riccardo Barzaghi	SOP06-03
	The recent activities of the ICGEM Service in 2022 - 2024 (abstract)	E. Sinem Ince and Sven Reißland	SOP06-04
	Comprehensive Geomagnetic Measurement Campaign for Accurate Magnetic North Declination Mapping in Greece (abstract)	Ioannis Katsafados, Melissinos Paraskevas and Vassilios Gikas	SOP06-05
	Reprocessing, validation and homogenization of historical marine gravity data from the southern and eastern Baltic Sea – the BalMarGrav project (abstract)	Monika Wilde-Piorko, Joachim Schwabe, Jakub Szulwic, Per-Anders Olsson, Arkadiusz Tomczak, Mirjam Bilker-Koivula, Olga Rosowiecka, Janis Kaminskis, Artu Ellmann, Gabriel Strykowski, Eimuntas Parseliunas, Vents Zusevics and Ole Andersen	SOP06-06

DAY 2

Thursday 05.09.2024

8:00	**Registration**	

ORAL BLOCK 4
SESSION 3
Static and time-variable global gravity field modelling
Chairs: Srinivas Bettadpur, Roland Pail, Adrian Jäggi

8:30	Long-wavelength variation in the Earth's shape from SLR and GRACE (abstract)	Minkang Cheng
8:45	Stochastic modelling of AOD model errors for application in GRACE/GRACE-FO data processing (abstract)	Petro Abrykosov and Roland Pail
9:00	Analysis of LRI Gravity Field Products from GRACE-FO (abstract)	Christopher McCullough, Matthias Ellmer, Eugene Fahnestock, Felix Landerer, Athina Peidou, David Wiese and Dah-Ning Yuan
9:15	Advancing space geodesy techniques: insights from GRACE / GRACE-FO (abstract)	Jakob Flury, Duwe Mathias and Igor Koch
9:30	COST-G: status and new developments (abstract)	Ulrich Meyer, Adrian Jäggi, Christoph Förste, Thorben Döhne, Joao Teixeira da Encarnacao, Wei Feng, Daniel Arnold, Martin Lasser, Christoph Dahle and Eva Börgens
9:45	Improving the Spatial Resolution of GRACE Data for Localized Studies: A Case Study on Sri Lanka Using a Moving Window Ratio Algorithm (abstract)	Thunendran Periyandy, Duminda D R Welikanna and C K Shum
10:00-10:30	**Coffee Break**	

ORAL BLOCK 5
SESSION 3
Static and time-variable global gravity field modelling
Chairs: Srinivas Bettadpur, Roland Pail, Adrian Jäggi

10:30	Global gravity and mass change observations beyond GRACE-FO: updates on the upcoming GRACE-Continuity mission (abstract)	David Wiese, Frank Webb, Felix Landerer, Mike Gross, Frank Flechtner, Krzysztof Snopek, Christoph Dahle and Sebastian Fischer
10:45	Development of the Next-generation gravity mission (NGGM) as part of the Mass-change And Geoscience International Constellation (MAGIC) (abstract)	Roland Pail and Ilias Daras
11:00	Contributions of the NGGM and MAGIC constellation to geodesy with an emphasis on the IHRF (abstract)	Elisavet-Maria Mamagiannou and George Vergos
11:15	Future satellite gravity field missions – Towards a direct time-variable parametrization (abstract)	Philipp Zingerle, Roland Pail and Thomas Gruber
11:30	Gravity field determination by the space-wise approach in quantum future mission studies (abstract)	Lorenzo Rossi, Mirko Reguzzoni, Öykü Koç and Federica Migliaccio
11:45	Reduction capabilities of ocean tide aliasing by co-estimation of major constituents with future satellite constellations and formations (abstract)	Nikolas Pfaffenzeller and Roland Pail
12:00-14:00	**Lunch Break**	

ORAL BLOCK 6 **SESSION 1** Reference systems and frames in Physical Geodesy **Chairs: Riccardo Barzaghi, Laura Sánchez, Hartmut Wziontek**		
14:00	On the role of regional comparisons of absolute gravimeters within the International Terrestrial Gravity Reference Frame (ITGRF) (abstract)	Hartmut Wziontek, Vojtech Pálinkáš and Ezequiel Dario Antokoletz
14:15	The correction for the pole tide in the International Terrestrial Gravity Reference Frame and in the International Terrestrial Reference Frame (abstract)	Jaakko Mäkinen
14:30	Estimation of gravity variations at absolute stations in the Czech Republic from measurements compatible with ITGRS (abstract)	Vojtech Pálinkáš, Jakub Kostelecký and Miloš Vaľko
14:45	On the application of the Atmospheric attraction computation service (Atmacs) in absolute gravimetry (abstract)	Ezequiel Antokoletz, Hartmut Wziontek, Thomas Klügel, Kyriakos Balidakis and Henryk Dobslaw
15:00	Review and Revision of Normal Gravity Field Models (abstract)	Ilya Oshchepkov, Irina Mezhenova and Ilnur Nevretdinov
15:15	Error tree analysis of geopotential field models (abstract)	Josef Niedermaier, Roland Pail and Thomas Gruber
15:30	Height datum: Definition, New Concepts, and Standardization (abstract)	Xiaopeng Li, Marcelo Santos, Pavel Novák, et al.
15:45	The temporal evolution of the physical heights: Theoretical and practical considerations under the prism of the International Height Reference Frame realization (abstract)	Dimitrios Ampatzidis and Georgos S. Vergos
16:00-16:30	**Coffee Break**	
16:30-18:00	**Short oral presentations of Session 1 and 3 posters**	
18:00-20:00	Poster Session S1+S2+S3+S4+S5+S6	
21:00	Conference Dinner	

SHORT ORAL BLOCK 2
SESSION 1 - SESSION 3

Time Slot	Title	Authors	Poster ID
Session 1 Chairs: Riccardo Barzaghi, Laura Sánchez, Hartmut Wziontek			
16:30 - 16:50	The potential of SWOT altimetry data for validating the accuracy of marine geoid models in the Baltic Sea (abstract)	Aleksei Kupavõh, Artu Ellmann, Nicole Delpeche-Ellmann and Sander Varbla	SOP01-01
	The IHRF CC to ensure the long-term sustainability of the IHRS/IHRF (abstract)	Georgios S. Vergos, Laura Sánchez and Riccardo Barzaghi	SOP01-02
	A new determination of the vertical gravity gradients at the absolute gravity stations of the Czech Republic (abstract)	Martin Lederer and Miloš Val'Ko	SOP01-03
	Gravity reference frame realization and densification in the field (abstract)	Christian Gerlach, Jan Müller, Erik Brachmann and Hartmut Wziontek	SOP01-04
	Height System Unification and Transformation in Switzerland (abstract)	Urs Marti	SOP01-05
16:50 - 17:10	Estimating the new geoid and establishing the IHRS/IHRF in Italy (abstract)	Daniela Carrion and Riccardo Barzaghi	SOP01-06
	JGEOID2024: the Japanese gravimetric geoid model incorporating nationwide airborne gravity data (abstract)	Koji Matsuo	SOP01-07
	The design of the cors geodetic network "Geo-Net" in Albania. (abstract)	Eduart Blloshmi, Bledar Sina and Arli Llabani	SOP01-08
	Realization of Gravimetric Measurements in the Local Datum of Tide Gauges in Albania. (abstract)	Bledar Sina, Eduart Blloshmi and Arli Llabani	SOP01-09
	Roadmap for geopotential-based height systems (abstract)	Laura Sanchez, Qing Liu, Josef Niedermaier, Thomas Gruber, Roland Pail and Michael Schmidt	SOP01-10
17:10 - 17:30	Experimental geoid model for Greece and evaluation using a velocity field model (abstract)	Vassilios Grigoriadis, Stylianos Bitharis, Vassilios Andritsanos and Dimitrios Natsiopoulos	SOP01-11
	Exact Ekman formulas for gravity and height conversion among permanent tide systems and the impact of varying load Love numbers (abstract)	Ropesh Goyal and Sten Claessens	SOP01-12
	Development towards consistently-precise Indian gravimetric geoid model: Results from Haryana region	Ropesh Goyal, Rohit Gaur, Neeraj Gurjar and Onkar Dikshit **CANCELED**	SOP01-13
	The absolute gravity network of Italy in the framework of the ITGRS/ITGRF (abstract)	Riccardo Barzaghi, Daniela Carrion, Lorenzo Rossi, Barbara Betti, Federica Migliaccio, Alfonso Vitti, Federica Riguzzi, Luca Samperi, Filippo Greco, Giovanna Berrino, Alessandra Borghi , Daniele Carbone, Francesco Vespe, Alessandro Germak, Alessio Facello, Andrea Prato, Augusto Mazzoni, Marco Fortunato, Matteo Amendola	SOP01-14
	Investigations of height system combination towards the evaluation of the Hellenic Vertical Datum (abstract)	Panagiotis Slavoudis and Georgios Vergos	SOP01-15
17:30 - 18:00	GNSS and Gravity Measurements at Tide Gauges in Greek Territory (abstract)	Melissinos Paraskevas, Ioannis Katsafados and Dimitrios Ampatzidis	SOP01-16
	Preliminary results on the new Hellenic Geoid 2024 in support of a geoid-based VRF (abstract)	Georgios S. Vergos, Vassilios N. Grigoriadis, Dimitrios A. Natsiopoulos, Vassilios D. Andritsanos, Melissinos Paraskevas and Nestoras Papadopoulos	SOP01-17

Time Slot	Title	Authors	Poster ID
Session 3 Chairs: Srinivas Bettadpur, Roland Pail, Adrian Jäggi			
17:30 - 18:00	GOCE SGG wavelet multi-resolution analysis to the latest Level 2 GOCE baselines (abstract)	Eleftherios Pitenis and Georgios S. Vergos	SOP03-01
	JPL Level-2A products: GRACE/GRACE-FO Dynamic Orbits (abstract)	Athina Peidou, Matthias Ellmer, Eugene Fahnestock, Felix Landerer, Chris Mccullough, David Wiese and Dah-Ning Yuan	SOP03-02
	Impact of GRACE-FO LRI on the high-frequency domain of a combined static Earth gravity field solution (abstract)	Grigorios Kalimeris, Roland Pail and Thomas Gruber	SOP03-03
	Application of machine learning algorithms to EWT variations forecasting from GRACE/GRACE-FO (abstract)	Konstantinos Alexiou and Georgios Vergos	SOP03-04
	Quantitative Analysis of Nubian Sandstone Aquifer Response to Climate Change Using GRACE and Hydrological Models (abstract)	Hussein A. Mohasseb, Wenbin Shen, Hussein A. Abd-Elmotaal, Atef Makhloof, Mostafa Abd-Elbaky and Ayman A. Hassan	SOP03-05
	Intercomparison of Spherical Harmonics and Mascons for GRACE-based Mass Change Estimates (abstract)	Huiyi Wu, Marius Schlaak and Roland Pail	SOP03-06

DAY 3

Friday 06.09.2024

8:00	**Registration**	
	ORAL BLOCK 7 **SESSION 1** Reference systems and frames in Physical Geodesy **Chairs: Riccardo Barzaghi, Laura Sánchez, Hartmut Wziontek**	
8:30	The first realization of NAPGD2022: GEOID2022 and its accuracy estimation (abstract)	Yan Ming Wang, Kevin Ahlgren, Xiaopeng Li, Ryan Hardy, Jianliang Huang, Ismael Foroughi, Marc Veronneau, David Avalos-Naranjo and Jordan Krcmaric
8:45	Towards an improved gravimetric geoid in Albania (abstract)	Georgios Vergos, Dimitrios Natsiopoulos, Kristaq Qirko, Oltjon Balliu, Endri Qershija, Perparim Ndoj, Grigorios Tsokas and Alexandros Stampolidis
9:00	Modernisation of the Swiss Vertical Reference System (abstract)	Elisa Borlat, Jerôme Carrel, Sébastien Guillaume, Urs Marti, Andreas Schlatter and Daniel Willi
9:15	Consistent pointwise determination of new geopotential numbers in a levelling-assisted regional IHRS realisation (abstract)	Anders Alfredsson and Jonas Ågren
9:30	Recovery of gravity potential values from regional quasigeoid models at Argentinean stations of the International Height Reference Frame (IHRF) (abstract)	Agustín Reynaldo Gómez, Claudia Noemí Tocho and Ezequiel Antokoletz
9:45	Towards a first solution for the International Height Reference Frame (IHRF) (abstract)	Laura Sanchez, Riccardo Barzaghi and Georgios Vergos
10:00-10:30	Coffee Break	

	ORAL BLOCK 8 **SESSION 4** Regional gravity field modelling and geophysical interpretation **Chairs: Pavel Novak, Mirko Reguzzoni, Ismael Foroughi**	
10:30	Status and development of high-resolution strapdown gravimetry at DTU (abstract)	SpaceBjørnar Dale, Ove Christian Dahl Omang, Tim Enzlberger Jensen and René Forsberg
10:45	Airborne Gravity Vector for Geoid Determination; Insights from a Real Dataset (abstract)	Ismael Foroughi, Mehdi Goli, Stephen Ferguson and Spiros Pagiatakis
11:00	Least Squares Collocation for Continental Scale Analysis Ready Gravity Data (abstract)	Neda Darbeheshti and Jack McCubbine
11:15	Modelling gravity and geoid by Least Squares Collocation with planar covariance models (abstract)	Riccardo Barzaghi, Daniela Carrion and Öykü Koç
11:30	Detailed gravity field modelling in high mountains treated in spatial domain: a case study in Tatra Mountains (Slovakia/Poland) (abstract)	Robert Čunderlík, Marek Macák, Pavol Zahorec, Juraj Papčo and Zuzana Minarechová
11:45	Effect of Implementing Moho Depths on Precise Height Datum Determination for Africa (abstract)	Hussein Abd-Elmotaal, Kurt Seitz, Norbert Kühtreiber, Thomas Grombein, Hansjörg Kutterer and Bernhard Heck
12:00-14:00	Lunch Break	

ORAL BLOCK 9 SESSION 4 Regional gravity field modelling and geophysical interpretation **Chairs: Pavel Novak, Mirko Reguzzoni, Ismael Foroughi**		
14:00	Moho depth estimation in the wider Hellenic and Eastern Mediterranean regions using GOCE gravity data (abstract)	Eleftherios Pitenis and Georgios S. Vergos
14:15	Purely geodetic estimation of the Mean Dynamic Topography and Geostrophic Currents in the Tyrrhenian and Adriatic Seas (Italy) (abstract)	Alessandra Borghi, Damiano Delrosso, Maher Bouzaiene and Antonio Guarnieri
14:30	Spectral gravity forward modelling of continuous 3D variable density contrasts using an arbitrary integration radius (abstract)	Blazej Bucha
14:45	On orthogonality properties of spherical and spheroidal harmonic functions (abstract)	Michal Šprlák
15:00	Numerical evaluation of variations in gravitational potential derivatives up to second order implied by polyhedral shape changes for high resolution Digital Terrain Models (abstract)	Georgia Gavriilidou and Dimitrios Tsoulis
15:15	Physics-Informed Neural Networks for local geoid modeling: preliminary results in Colorado (abstract)	Tao Jiang and Zejie Tu
15:30	Gravitational Inversion: 3-D non-uniqueness vs. 2-D uniqueness and implications on time-variable gravity solutions (abstract)	Benjamin Chao, Jing Li and Jin Li
15:45	Experiments with point mass model for estimating total water storage change from GRACE spherical harmonics (abstract)	Vikas Balajirao Kapale, Atul Kumar and Balaji Devaraju
16:00-16:30	Coffee Break	

16:30-18:00	**Short oral presentations of Session 3 and 4 posters**
18:00-20:00	Poster Session S1+S2+S3+S4+S5+S6

SHORT ORAL BLOCK 3
SESSION 3 - SESSION 4

Time Slot	Title	Authors	Poster ID
Session 3 **Chairs: Srinivas Bettadpur, Roland Pail, Adrian Jäggi**			
16:30 - 16:50	Computation and validation of gravitational, tidal and non tidal accelerations. (abstract)	Georgios Serelis, Xanthos Papanikolaou, Dimitrios Anastasiou and Maria Tsakiri	SOP03-07
	Signatures of residual ocean tides in GRACE (-FO) ranging post-fits (abstract)	Igor Koch, Mathias Duwe and Jakob Flury	SOP03-08
	Evaluation of the retrieved gravity fields and their ocean tide aliasing errors by small satellite constellations (abstract)	Wei Liu, Xiaotao Chang and Guangbin Zhu	SOP03-09
	Contribution of Very-High Degree Spherical Harmonic Coefficients to Selective Gravity Field Functionals at Known Benchmarks in Greece	Konstantinos Patlakis, Dimitrios Tsoulis and George Vergos **CANCELED**	SOP03-10
	Evaluation of GOCE/GRACE based Global Geopotential Models over Algeria with Collocated GPS/Levelling Observations and new local terrestrial and airborne gravity data	Benahmed Daho Sid Ahmed **CANCELED**	SOP03-11
Session 4 **Chairs: Pavel Novak, Mirko Reguzzoni, Ismael Foroughi**			
16:50 - 17:10	GGMCalc 2.0: A Comprehensive Tool for Computing a Wide Range of Earth's Gravitational Field Functionals (abstract)	Siamak Moazezi	SOP04-01
	A novel MatLab-based software library for the calculation of far–zone effects for spherical integral (abstract)	Martin Pitoňák, Petr Trnka, Jiří Belinger, Pavel Novák and Michal Šprlák	SOP04-02
	Evaluation and homogenisation of a marine gravity database from shipborne and satellite altimetry-derived gravity data over the Nigeria Sea (abstract)	Michael Bako and Jurgen Kusche	SOP04-03
	Physics-Informed Neural Networks for local geoid modeling: preliminary results in Colorado (abstract)	Tao Jiang and Zejie Tu	SOP04-04
	A 30 Arc-second Global Digital Elevation Merged Model GDEMM2024 for Geodesy and Geophysics (abstract)	E. Sinem Ince, Oleh Abrykosov and Christoph Förste	SOP04-05
17:10 - 17:30	On uncertainties associated with regional gravity field modelling (abstract)	Pavel Novák, Mehdi Eshagh and Martin Pitoňák	SOP04-06
	Effect of the differences between available DEMs on high-precision geoid modelling in the region of CERN (abstract)	Julia Azumi Koch, Benedikt Soja and Markus Rothacher	SOP04-07
	Gravity data analysis by wavelt transform (abstract)	Sunjay Sunjay	SOP04-08
	Spectral combination of vertical and horizontal spheroidal boundary-value problems: A theoretical study (abstract)	Martin Pitoňák, Michal Šprlák, Jiří Belinger and Pavel Novák	SOP04-09
	Repeated gravity observations at the AUT1 IHRF station as a means to monitor potential temporal variations (abstract)	Dimitrios Natsiopoulos, Georgios Vergos and Elisavet G. Mamagiannou	SOP04-10

Time Slot	Title	Authors	Poster ID
17:30 - 18:00	Hybrid Geoid Modeling for the GeoNetGNSS CORS network (abstract)	Dimitrios A. Natsiopoulos, Georgios Vergos, Elisavet G. Mamagiannou, Eleni A. Tzanou, Anastasia I. Triantafyllou, Ilias N. Tziavos, Dimitrios Ramnalis and Vassilios Polychronos	SOP04-11
	Western Mediterranean altimetry and gravity covariance study for DOT estimation through MIMOS (abstract)	Vassilios D. Andritsanos and Ilias N. Tziavos	SOP04-12
	A New Reference Equipotential Surface of the Earth (abstract)	Jason Koci and Georgios Panou	SOP04-13
	Global gravitational field modelling for spheroidal planetary bodies: theory and numerical aspects (abstract)	Jiri Belinger, Veronika Dohnalova, Martin Pitonak, Pavel Novak and Michal Sprlak	SOP04-14
	Implementation of different stochastic models in dynamic modelling of polyhedral gravity signal variations (abstract)	Georgia Gavriilidou and Dimitrios Tsoulis	SOP04-15
	An experimental study on computation and validation of local geoid moldel (abstract)	Onur Karaca and Bihter Erol	SOP04-16
	Evaluation and validation of the geodetic data for the project GARUDA over Gangetic plains in India (abstract)	Hemanth Yarlagadda, Ropesh Goyal, Jayaluxmi Indu and Neeraj Gurjar	SOP04-17
	Recent geoid and MDT computation over the Mediterranean Sea in the framework of the Geomed 2 project (abstract)	Riccardo Barzaghi, Georgios Vergos, Daniela Carrion, Sean Bruinsma, Sylvain Bonvalot, Corinne Salaun, Ilias Tziavos, Vassilios Grigoriadis, Lucia Seoane, Franck Reinquin, Pascal Bonnefond, Per Knudsen, Ole Andersen, Tomislav Basic	SOP04-18
	Corrective surface over northern part of Algeria based on EGM2008/RTM geoid model as support the geodynamical applications	Benahmed Daho Sid Ahmed and Derkaoui Aicha **CANCELED**	SOP04-19

POSTER
PRESENTATIONS

Title	Authors	Poster ID
POSTER SESSION 1		
The potential of SWOT altimetry data for validating the accuracy of marine geoid models in the Baltic Sea	Aleksei Kupavõh, Artu Ellmann, Nicole Delpeche-Ellmann and Sander Varbla	SOP01-01
The IHRF CC to ensure the long-term sustainability of the IHRS/IHRF	Georgios S. Vergos, Laura Sánchez and Riccardo Barzaghi	SOP01-02
A new determination of the vertical gravity gradients at the absolute gravity stations of the Czech Republic	Martin Lederer and Miloš Val'Ko	SOP01-03
Gravity reference frame realization and densification in the field	Christian Gerlach, Jan Müller, Erik Brachmann and Hartmut Wziontek	SOP01-04
Height System Unification and Transformation in Switzerland	Urs Marti	SOP01-05
Estimating the new geoid and establishing the IHRS/IHRF in Italy	Daniela Carrion and Riccardo Barzaghi	SOP01-06
JGEOID2024: the Japanese gravimetric geoid model incorporating nationwide airborne gravity data	Koji Matsuo	SOP01-07
The design of the cors geodetic network "Geo-Net" in Albania.	Eduart Blloshmi, Bledar Sina and Arli Llabani	SOP01-08
Realization of Gravimetric Measurements in the Local Datum of Tide Gauges in Albania.	Bledar Sina, Eduart Blloshmi and Arli Llabani	SOP01-09
Roadmap for geopotential-based height systems	Laura Sanchez, Qing Liu, Josef Niedermaier, Thomas Gruber, Roland Pail and Michael Schmidt	SOP01-10
Experimental geoid model for Greece and evaluation using a velocity field model	Vassilios Grigoriadis, Stylianos Bitharis, Vassilios Andritsanos and Dimitrios Natsiopoulos	SOP01-11
Exact Ekman formulas for gravity and height conversion among permanent tide systems and the impact of varying load Love numbers	Ropesh Goyal and Sten Claessens	SOP01-12
Development towards consistently-precise Indian gravimetric geoid model: Results from Haryana region	Ropesh Goyal, Rohit Gaur, Neeraj Gurjar and Onkar Dikshit **CANCELED**	SOP01-13
The absolute gravity network of Italy in the framework of the ITGRS/ITGRF	Riccardo Barzaghi, Daniela Carrion, Lorenzo Rossi, Barbara Betti, Federica Migliaccio, Alfonso Vitti, Federica Riguzzi, Luca Samperi, Filippo Greco, Giovanna Berrino, Alessandra Borghi , Daniele Carbone, Francesco Vespe, Alessandro Germak, Alessio Facello, Andrea Prato, Augusto Mazzoni, Marco Fortunato, Matteo Amendola	SOP01-14
Investigations of height system combination towards the evaluation of the Hellenic Vertical Datum	Panagiotis Slavoudis and Georgios Vergos	SOP01-15
GNSS and Gravity Measurements at Tide Gauges in Greek Territory	Melissinos Paraskevas, Ioannis Katsafados and Dimitrios Ampatzidis	SOP01-16
Preliminary results on the new Hellenic Geoid 2024 in support of a geoid-based VRF	Georgios S. Vergos, Vassilios N. Grigoriadis, Dimitrios A. Natsiopoulos, Vassilios D. Andritsanos, Melissinos Paraskevas and Nestoras Papadopoulos	SOP01-17

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Cold Atom Interferometry Accelerometers for Future Satellite Gravity Missions	Annike Knabe, Manuel Schilling, Mohsen Romeshkani, Alireza Hosseiniarani, Nina Fletling, Alexey Kupriyanov, Jürgen Müller, Quentin Beaufils and Franck Pereira dos Santos	SOP02-01
CARIOQA-PMP: preliminary results of post-pathfinder mission scenarios simulations in context with Earth observation user needs	Katharina Lechner, Thomas Gruber and Roland Pail	SOP02-02
CubeSat Constellation and Gravimetry Mission Design using Full-Scale Simulations in the Context of the novel DORT-IM Ranging System	Matthew Darrow, Thomas Gruber, Roland Pail, Elisabeth Paul and Bastian Eder	SOP02-03
Future satellite gravimetry with a network of miniaturized satellites	Nikolas Pfaffenzeller, Roland Pail, Jonas Jensen, Prachit Vijay Kamble, Tanuja Datar, Alexander Kleinschrodt and Klaus Schilling	SOP02-04
Strapdown airborne gravimetry with focus on geophysical applications	Vadim Vyazmin and Andrey Golovan	SOP02-05
Scale factor (in)stability of ZLS-B78 - a worst case scenario?	Christian Gerlach	SOP02-06
CG-5 Processor: A MATLAB-based GUI to process Scintrex CG-5 gravity data	Rafailia-Maria Mavromatidou, Elisavet-Maria Mamagiannou, Dimitrios Natsiopoulos and George Vergos	SOP02-07
GravTools: An open source software for the analysis of relative gravity surveys	Andreas Hellerschmied	SOP02-08
Field and laboratory investigations of the A10-020 portable absolute gravimeter for the Finnish First Order Gravity Net	Jaakko Mäkinen, Marcin Sękowski, Przemysław Dykowski, Kaj Nyholm, Mirjam Bilker-Koivula, Jaakko Kuokkanen, Jyri Näränen, Arttu Raja-Halli, Hannu Ruotsalainen and Heikki Virtanen	SOP02-09
Theoretical Application of Chronometric Levelling: A qualitative and quantitative accuracy analysis	George Pantazis and Nikolaos Kanellopoulos	SOP02-10

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POSTER SESSION 3		
GOCE SGG wavelet multi-resolution analysis to the latest Level 2 GOCE baselines	Eleftherios Pitenis and Georgios S. Vergos	SOP03-01
JPL Level-2A products: GRACE/GRACE-FO Dynamic Orbits	Athina Peidou, Matthias Ellmer, Eugene Fahnestock, Felix Landerer, Chris Mccullough, David Wiese and Dah-Ning Yuan	SOP03-02
Impact of GRACE-FO LRI on the high-frequency domain of a combined static Earth gravity field solution	Grigorios Kalimeris, Roland Pail and Thomas Gruber	SOP03-03
Application of machine learning algorithms to EWT variations forecasting from GRACE/GRACE-FO	Konstantinos Alexiou and Georgios Vergos	SOP03-04
Quantitative Analysis of Nubian Sandstone Aquifer Response to Climate Change Using GRACE and Hydrological Models	Hussein A. Mohasseb, Wenbin Shen, Hussein A. Abd-Elmotaal, Atef Makhloof, Mostafa Abd-Elbaky and Ayman A. Hassan	SOP03-05
Intercomparison of Spherical Harmonics and Mascons for GRACE-based Mass Change Estimates	Huiyi Wu, Marius Schlaak and Roland Pail	SOP03-06
Computation and validation of gravitational, tidal and non tidal accelerations.	Georgios Serelis, Xanthos Papanikolaou, Dimitrios Anastasiou and Maria Tsakiri	SOP03-07
Signatures of residual ocean tides in GRACE(-FO) ranging post-fits	Igor Koch, Mathias Duwe and Jakob Flury	SOP03-08
Evaluation of the retrieved gravity fields and their ocean tide aliasing errors by small satellite constellations	Wei Liu, Xiaotao Chang and Guangbin Zhu	SOP03-09
Contribution of Very-High Degree Spherical Harmonic Coefficients to Selective Gravity Field Functionals at Known Benchmarks in Greece	Konstantinos Patlakis, Dimitrios Tsoulis and George Vergos **CANCELED**	SOP03-10
Evaluation of GOCE/GRACE based Global Geopotential Models over Algeria with Collocated GPS/Levelling Observations and new local terrestrial and airborne gravity data	Benahmed Daho Sid Ahmed **CANCELED**	SOP03-11

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GGMCalc 2.0: A Comprehensive Tool for Computing a Wide Range of Earth's Gravitational Field Functionals	Siamak Moazezi	SOP04-01
A novel MatLab-based software library for the calculation of far–zone effects for spherical integral	Martin Pitoňák, Petr Trnka, Jiří Belinger, Pavel Novák and Michal Šprlák	SOP04-02
Evaluation and homogenisation of a marine gravity database from shipborne and satellite altimetry-derived gravity data over the Nigeria Sea	Michael Bako and Jurgen Kusche	SOP04-03
Physics-Informed Neural Networks for local geoid modeling: preliminary results in Colorado	Tao Jiang and Zejie Tu	SOP04-04
A 30 Arc-second Global Digital Elevation Merged Model GDEMM2024 for Geodesy and Geophysics	E. Sinem Ince, Oleh Abrykosov and Christoph Förste	SOP04-05
On uncertainties associated with regional gravity field modelling	Pavel Novák, Mehdi Eshagh and Martin Pitoňák	SOP04-06
Effect of the differences between available DEMs on high-precision geoid modelling in the region of CERN	Julia Azumi Koch, Benedikt Soja and Markus Rothacher	SOP04-07
Gravity data analysis by wavelt transform	Sunjay Sunjay	SOP04-08
Spectral combination of vertical and horizontal spheroidal boundary-value problems: A theoretical study	Martin Pitoňák, Michal Šprlák, Jiří Belinger and Pavel Novák	SOP04-09
Repeated gravity observations at the AUT1 IHRF station as a means to monitor potential temporal variations	Dimitrios Natsiopoulos, Georgios Vergos and Elisavet G. Mamagiannou	SOP04-10
Hybrid Geoid Modeling for the GeoNetGNSS CORS network	Dimitrios A. Natsiopoulos, Georgios Vergos, Elisavet G. Mamagiannou, Eleni A. Tzanou, Anastasia I. Triantafyllou, Ilias N. Tziavos, Dimitrios Ramnalis and Vassilios Polychronos	SOP04-11
Western Mediterranean altimetry and gravity covariance study for DOT estimation through MIMOS	Vassilios D. Andritsanos and Ilias N. Tziavos	SOP04-12
A New Reference Equipotential Surface of the Earth	Jason Koci and Georgios Panou	SOP04-13
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Recent geoid and MDT computation over the Mediterranean Sea in the framework of the Geomed 2 project	Riccardo Barzaghi, Georgios Vergos, Daniela Carrion, Sean Bruinsma, Sylvain Bonvalot, Corinne Salaun, Ilias Tziavos, Vassilios Grigoriadis, Lucia Seoane, Franck Reinquin, Pascal Bonnefond, Per Knudsen, Ole Andersen, Tomislav Basic	SOP04-18
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Estimation of gravimetric contributions to sea level change in the Baltic Sea and prediction with Deep learning method	Fenghe Qiu, Roland Pail and Thomas Gruber	SOP05-01
Altimetry Data Analysis for Coastal Erosion: A Time Series Approach	Rafailia Adam and George Vergos	SOP05-02
Analysis of Extreme Flood Events Using GRACE-FO and SAR Data: A Case Study of Short-Term Flood in Thessaly, Greece	Anastasia Triantafyllou, Elisavet Maria Mamagiannou, George Vergos and Eleni Tzanou	SOP05-03

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POSTER SESSION 6		
GGOS: The Global Observing System of the International Association of Geodesy	"Laura Sanchez, Anna Riddell, José Rodríguez, Detlef Angermann, Martin Sehnal, Martin Lidberg, Thomas Gruber, Benedikt Soja, Michael Schmidt, Timothy Melbourne, Richard Gross, José M. Ferrandíz, Allison Craddock, Basara Miyahara, Georgios Vergos and Claudia Tocho	SOP06-01
The Global Geodetic Observing System: Facilitating Opportunities for Strategic Outreach, Collaboration, and Engagement with External Stakeholders	Allison B. Craddock, Richard S. Gross, Martin Sehnal, José C. Rodríguez, Detlef Angermann, Laura Sánchez and Athina Peidou	SOP06-02
Recent activities of the International Service for the Geoid and implementation of a new database for regional geoid models	"Mirko Reguzzoni, Lorenzo Rossi, Nicolò Zambon, Daniela Carrion, Juan Fernando Toro Herrera, Khulan Batsukh, Alberta Albertella, Kirsten Elger and Riccardo Barzaghi	SOP06-03
The recent activities of the ICGEM Service in 2022 - 2024	"E. Sinem Ince and Sven Reißland	SOP06-04
Comprehensive Geomagnetic Measurement Campaign for Accurate Magnetic North Declination Mapping in Greece	Ioannis Katsafados, Melissinos Paraskevas and Vassilios Gikas	SOP06-05
Reprocessing, validation and homogenization of historical marine gravity data from the southern and eastern Baltic Sea – the BalMarGrav project	Monika Wilde-Piorko, Joachim Schwabe, Jakub Szulwic, Per-Anders Olsson, Arkadiusz Tomczak, Mirjam Bilker-Koivula, Olga Rosowiecka, Janis Kaminskis, Artu Ellmann, Gabriel Strykowski, Eimuntas Parseliunas, Vents Zusevics and Ole Andersen	SOP06-06

SPLINTER MEETINGS

TUESDAY | 18:00-20:00: GGHS2024 Registration and material pickup

Time	WEDNESDAY
12:00-13:00	**International Gravity Field Service** **Riccardo Barzaghi and George S. Vergos**
13:00-14:00	**International Height Reference Frame** **George S. Vergos**
18:00-20:00	**Shaping Future Global Gravity Field Models and ICGEM Database** **Sinem Ince, Kirsten Elger** **Poster Session** **S1+S2+S3+S4+S5+S6**
	Conference Welcome Reception
	THURSDAY
12:00-13:00	**IAG Commission 2 "Gravity Field"** **Srinivas V Bettadpur & Tao Jiang**
13:00-14:00	**JSG T.26: Height datum: Definition, New Concepts, and Standardization** **Xiaopeng Li & Marcelo Santos**
18:00-20:00	**JWG 2.1.1: Development of the International Terrestrial Gravity Reference Frame** **Hartmut Wziontek & Sylvain Bonvalot** **Poster Session** **S1+S2+S3+S4+S5+S6**
	Conference Dinner
	FRIDAY
12:00-13:00	**ICCC JWG C10: Tailored Parameterization Strategies for Climate Applications of Satellite Gravimetry** **Marius Schlaak & Joao De Teixeira da Encarnacao**
13:00-14:00	**JWG2.2.1: Comprehensive gravity data integration for the sub-cm geoid/quasi-geoid modelling** **Ismael Foroughi & Tao Jiang**
	Poster Session **S1+S2+S3+S4+S5+S6**

NOTES

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