

## **Stelios P. Mertikas**

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**Research Interests:** Geodesy, Surveying Engineering, Satellite Geodesy, Global Satellite Navigation Systems, Hydrography, Surface and Underwater Positioning, Precise Geodetic Positioning, Statistics, Robust Statistics, Geodetic quality control, Satellite Altimetry, accuracy measures, statistical process control, sea level changes, geodynamic deformation, remote sensing, image fusion, radar interferometry.

### **Languages:**

**Greek:** Mother tongue (excellent in speaking, writing, reading and understanding).

**English:** excellent in speaking, writing, reading and understanding.

### **Education/Studies:**

**Diploma in Surveying Engineering**, June 1979, (5-year University program) from the National Technical University of Athens, Greece, Dr. George Veis, senior thesis advisor. Thesis: "Hydrographic Survey, Tides, and Currents at the Rio-Antirio Straits, Patras, Greece" (studies duration: 09/1974-07/1979).

**Master of Science in Engineering, Surveying Engineering**, March 1983, from the Department of Surveying Engineering of the University of New Brunswick, Canada, Dr. D.E. Wells, advisor. Thesis title: "Differential Global Positioning System (GPS) Navigation: A Geometrical Analysis" (09/1980-03/1983).

**Doctor of Philosophy in Surveying Engineering**, December 1988, from the Department of Surveying Engineering of the University of New Brunswick, Canada, Supervision by a Committee consisting of Profs. D.E. Wells, R.B. Langley, W. Faig and Dr. A. Kluesberg. Dissertation title: "A statistical Investigation into Reliable and Efficient Accuracy Measures in Positioning" (03/1983-12/1987).

**Canada Post-Doctoral Research Fellow**, 1993, at the Department of Surveying Engineering, University of Calgary, Canada. Supervision by Prof. Klaus-Peter Schwarz (Past President of International Association of Geodesy), Worked on the development of models for GPS quality control and on precise airborne positioning and attitude control (05/1993-12/1993).

**Australia Honorary Visiting Fellow**, 2006, School of Geomatic Engineering, University of New South Wales, Sydney, Australia. Worked on research projects to develop generic algorithms for quality control of GPS measurements (03/1996-10/1996).

**Japan Science and Technology Agency Visiting Fellow**, 2000, at the National Research Institute for Geosciences and Disaster Prevention, Tsukuba, Ibaraki, Japan, worked on research projects for the automatic and online detection of small and persistent shifts in Global Positioning System station coordinates by Statistical Process Control (06/2000-09/2000).

**Hong Kong Polytechnic University, Visiting Professor**, 2014, at the Land Surveying and Geo-Informatics, Kowloon, Hong Kong, worked on research projects for rock fall and landslide monitoring and delay-Doppler altimetry (04/2014-11/2014, 3 months intermittent).

**University of Kyoto, Fellow** of the Japan Society for the Promotion of Science, 2014, at the Graduate School of Sciences, University of Kyoto, Japan, worked on research projects for the calibration of delay-Doppler altimetry (11/2014-12/2014).

## **Professional Experience and Training:**

### **Period: 07/1991-Present**

**Employer:** Technical University of Crete, Public sector,

**Location:** Crete, Greece,

**Job:** Professor, Geodesy and Geo-Informatics Engineering Lab Director,

**Field of Activity:** School of Mineral Resources Engineering,

**Description of Duties and main Achievements:**

As Professor and Laboratory Director have taught the following undergraduate courses at the Technical University of Crete, School of Mineral Resources Engineering:

- Introduction to Geodesy,
- Mining Surveying,
- Geodesy,
- Applied Statistics,
- Geo-Statistics,
- Remote Sensing, Engineering Geodesy,
- Remote Sensing for Environment.

and at the graduate level:

- Remote Sensing of Environment and Digital Image Analysis,
- Global Navigation Satellite Systems,
- Special Subjects of Environmental Engineering,
- Subjects in Mineral Resources Engineering.

Supervised undergraduate Diploma Theses, Master Theses, Doctoral Dissertations, and Post-Doctoral Researches.

As Director of Graduate Studies initiated and led the graduate program at Master's and Ph.D. level on "Environmental Geo-Technology" at the School of Mineral Resources Engineering, Technical University of Crete (1997-2004).

Acted as coordinator and Principal Investigator of research Projects at International, European and National level, involving National Aeronautics and Space Administration-USA, European Space Agency, Austrian Academy of Sciences, ETH Zurich, Switzerland, Observatoire de la Côte d'Azur-France, Centre National d'Etudes Spatiales (CNES)-France, State Oceanic Administration-China; UEA (University of the State of Amazonas)-Brazil, University of North Carolina, USA; Danish Space Center; Hong Kong Polytechnic University, Tongji University-China, etc.

Established the 4th world permanent research infrastructure at the island of Gavdos, Crete, Greece for calibrating satellite radar altimeters of American, European, Chinese and Indian missions. The other 3 sites are operated by JPL, NASA, USA in California, by CNES France in Corsica and by Australian Government in Tasmania. This Gavdos Calibration/Validation permanent infrastructure has been operating and providing absolute biases for altimetry satellites for more than a decade. It was established in 2001 and has been on continuous operation as of 2004. It can provide calibration/validation for all altimetric missions (i.e., Jason-2, HY-2, SARAL/AltiKa, Sentinel-3, Cryosat-2, etc.). It includes a major set of permanent facilities, prototype scientific equipment (transponder), while at the same time it collects archives, analyses, interprets and disseminates scientific data internationally.

Established a permanent monitoring network of Global Navigation Satellite System receivers (USA, Russian, European, and Chinese), along with an array of sea-level and atmospheric sensors in West Crete to monitor earth tectonic deformation, atmospheric variability, and for satellite calibration.

In collaboration with the European Space Agency, designed and manufactured a prototype microwave transponder to calibrate European and International satellite altimeter missions. This instrument is being set up at a permanent calibration infrastructure in West Crete, Greece to calibrate ESA operational satellites, USA/France, Indian/French and Chinese missions.

**Period: 01/1991-06/1991**

**Employer:** University of Toronto, Public Sector,

**Location:** Mississauga, Toronto, Canada,

**Job:** Visiting Assistant Professor,

**Field of Activity:** Department of Survey Science,

**Description of Duties and main Achievements:**

During a 6-month sabbatical, taught as Assistant Professor at the Centre for Surveying Science, Mississauga Campus, University of Toronto, the following courses:

- SUR 320 Introduction to Geodetic Methods,
- SUR 204 Surveying-IV, and
- Survey Camp.

**Period: 09/1989-12/1990**

**Employer:** Technical University of Crete, Public Sector,

**Location:** Crete, Greece,

**Job:** Visiting Professor, Teaching on contract (50%)

**Field of Activity:** Department of Mineral Resources Engineering,

**Description of Duties and main Achievements:**

Taught the following undergraduate courses at the Department of Mineral Resources Engineering, Technical University of Crete:

- Mining Surveying,
- Introduction to Geodetic Surveying.

**Period: 09/1988-12/1990**

**Employer:** Hellenic Mapping and Cadastral Organization, Public Sector,

**Location:** Athens, Greece,

**Job:** Scientific Advisor,

**Field of Activity:** Department of the Director,

**Description of Duties and main Achievements:**

Scientific Advisor on Satellite Geodesy and Global Positioning Systems of the President at the National Cadastral and Mapping Organization in Athens, Greece.

**Period: 04/1988-9/1988**

**Employer:** Hellenic Navy Hydrographic Service, Military Service,

**Location:** Athens, Greece,

**Job:** Scientific Advisor,

**Field of Activity:** Hydrographic Service Headquarters,

**Description of Duties and main Achievements:**

Took over and delivered research work on Feasibility Study and Selection of GPS satellite receivers for Hydrographic Surveying for Navy Operations, Navy Headquarters, Athens, Greece.

**Period: 07/1985-9/1985**

**Employer:** Athens Water Supply and Sewage Company,

**Location:** Computer Center, Athens, Greece,

**Job:** Engineer,

**Field of Activity:** Database development for the research projects of the Company,

**Description of Duties and main Achievements:**

Worked at the Computer Center of the "Athens Water Supply and Sewage Company", through the International Association for the Exchange of Students for Technical Experiences, Athens, Greece, as training graduate student from Canada.

**Period: 11/1981-12/1981**

**Employer:** University of New Brunswick,

**Location:** Fredericton, NB, Canada,

**Job:** Research Associate on Satellite Positioning and Navigation,

**Field of Activity:** Geodesy and Geomatics Engineering,

**Description of Duties and main Achievements:** Took active role in the research project of the Canadian Hydrographic Service and the University of New Brunswick, Canada to evaluate the first and prototype satellite GPS receiver and the assessment of the development of its operational software (STI-5010 GPS receiver) on a mission cruise of the Canadian Research Vessel Hudson from Saint John's, Newfoundland, Canada to the Azores, in the North Atlantic Ocean, in November 1981.

**Period: 09/1980-12/1987**

**Employer:** University of New Brunswick,

**Location:** Fredericton, NB, Canada,

**Job:** Research Associate on Satellite Positioning and Navigation,

**Field of Activity:** Geodesy and Geomatics Engineering,

**Description of Duties and main Achievements:** Worked on research Projects of the University of New Brunswick, Canada, such as Differential GPS Navigation, Prediction of Satellite Orbits, Statistical Analysis of satellite data, Alert software for satellite availability. Most of the alert software, such as ALERT, GEPSAL, MacGEPSAL, which developed during this period, were sold in the international market.

**Period: 09/1980-12/1987**

**Employer:** University of New Brunswick,

**Location:** Fredericton, NB, Canada,

**Job:** Lab instructor, Research Associate and Lecturer,

**Field of Activity:** Geodesy and Geomatics Engineering,

**Description of Duties and main Achievements:** As Lecturer taught the following course at the Department of Geodesy and Geomatics Engineering, University of New Brunswick, Canada:

- SE 4312 Advanced Adjustment Calculus, University of New Brunswick, Canada,

As Lab instructor taught the following Labs in the courses:

- SE 1001-Elementary Surveying (1 term,
- SE 3032-Geodetic Astronomy (3 terms),
- SE 4053-Hydrographic Surveying (5 terms),

- SE 4072-Hydrographic Surveying II (4 terms,
- SE 2801-Advanced Surveying for Civil Engineers (1 term),
- SE 4131-Special Studies in Adjustments (3 terms,
- SE 4312-Advanced Adjustment Calculus (4 terms,
- SE 3023-Geodetic and Surveying Camps (5 terms,
- SE 3032-Geodetic Astronomy Camp.

Participated in research projects on Differential Global Positioning System navigation, Development of efficient and reliable accuracy measures in satellite navigation in describing uncertainties for digital charts of the Canadian Hydrographic Service, Development of Alert algorithms and software to predict the visibility and availability of satellites at a location and over a period of time, etc.

**Period: 02/1980-09/1980**

**Employer:** National Technical University of Athens, Lab of Higher Geodesy

**Location:** Athens, Greece,

**Job:** Geodetic Surveying Engineer,

**Field of Activity:** Ground Deformation Monitoring,

**Description of Duties and main Achievements:** Worked at the research project on monitoring earth deformation at the "Mornos" Water Dam, Research Project of the National Technical University of Athens, Laboratory of Higher Geodesy, under the supervision of Professor George Veis.

**Period: 06/1978-09/1978**

**Employer:** International Association for the Exchange of Students for Technical Experiences

**Location:** City of Helsinki, Finland,

**Job:** Geodetic Surveying Engineer,

**Field of Activity:** Urban Design, Deformation and Surveying Monitoring,

**Description of Duties and main Achievements:** Worked as Geodetic Surveying Engineer at the Town-Planning and Cartography Department of Helsinki City, Finland, through the International Association for the Exchange of Students for Technical Experiences, as a training student from the National Technical University of Athens, Greece.

**Professional & Managerial Experience:**

**Full Professor:** 2000 – present, School of Mineral Resources Engineering, Crete Technical University, Greece.

**Laboratory Director,** 2000 – present, Geodesy & Geomatics Engineering Lab, School of Mineral Resources Engineering, Crete Technical University.

**Director of Graduate Studies,** 1997 – 2004, School of Mineral Resources Engineering, Crete Technical University, Crete, Greece.

**Associate Professor,** 1996 – 2000, School of Mineral Resources Engineering, Crete Technical University, Greece.

**Assistant Professor,** 1991 – 1996, School of Mineral Resources Engineering, Crete Technical University, Greece.

**Visiting Assistant Professor,** 1991-Spring Term, The University of Toronto, Department of Surveying Science, Canada, for 6 months. Courses: SUR 320 Introduction to Geodetic Methods, SUR 204 Surveying IV.

**Scientific Advisor**, 1988 – 1990, Hellenic Mapping and Cadastral Organization, Athens, Greece, Greece, Determination of geodetic positions in urban Greece using GPS, positioning of photogrammetric aircraft, control point coding, etc.

**Lecturer**, 1986, at the Surveying Engineering Department of the University of New Brunswick, Canada. Course: SE 4312 Advanced Adjustment Calculus

### **Skills & Competences:**

#### **Social Skills:**

- 2009-present: Permanent Member of the Committee for the Quality Assurance and Accreditation Agency at the Technical University of Crete, Greece.
- 2009-present: Member of the Permanent Scientific Committee on Assessing Seismic Risks at the National Organization for the Prevention and Forecasting of Earthquakes, Athens, Greece.
- 7-2004-present: Permanent Member of the Engineering Council of the Technical University of Crete, Greece.
- 9/1999-9/2001: Vice-Chairman at the Department of Mineral Resources Engineering, and Department delegate in the Rectorship University Council, Member of the Library Committee at the Technical University of Crete, Greece.
- 1997-2004: Director of Graduate Studies at the School of Mineral Resources Engineering, Technical University of Crete, Greece.

#### **Organizational Skills & Competences:**

- Organized a "Regional Outreach Workshop on "Lab's contribution to local and regional capacity building" in Crete, Greece, July 2011.
- Organized an International Technical Workshop on "Deformation Monitoring & Satellite Altimetry Calibration" in Crete, Greece, 20-21 January 2011.
- Organized (Chairman) and coordinated an IAG International Symposium on Gravity, Geoid and Earth Observation 2008, 23-27 June 2008, Technical University of Crete, Chania, Greece. More 250 international scientists participated, International Association of Geodesy.
- Chairman for the past 5 years (2008-2013) for International SPIE Remote Sensing of the Ocean, Sea Ice, and Large Water Regions.
- Organized (Chairman) and coordinated International Workshop on "Global Positioning Systems in Geosciences", Technical University of Crete, Chania, Greece, 1991.
- 2001-Present: Established the permanent infrastructure for satellite altimeter calibration n Gavdos, Crete, Greece. The 4<sup>th</sup> such research infrastructure in the world.
- 2009-present: Principal Investigator (PI) at the European Space Agency, for Cryosat-2 and Sentinel-3 Satellite Calibration Validation Retrieval Team.
- 2009-present: Principal Investigator in the SARAL/AltiKa satellite calibration team (Indian Space Research Organization and the Centre National d'Etudes Spatiales, France), and the International Sea Surface Topography Science Team (as of 2001).
- 2009-present: Permanent Scientific Committee for Earthquake Risk Assessment and Evaluation, Organization for Earthquake Protection and Planning, Athens, Greece.
- 2001-Present: Established the permanent facility at Gavdos island for the calibration of satellites of Jason series (USA/France), Envisat, SARAL/AltiKa(French/India), HY-2 (China), Cryosat-2(ESA), Sentinel-3 (ESA), etc.
- Developed software for estimating the satellite altimeter bias for international missions, using the permanent research infrastructure in Gavdos, Crete, Greece.

**Publications:****Books& Monographs:**

1. Mertikas S. P. (editor, 1993). Global Positioning Systems in Geosciences, Proceedings of the International Workshop, Technical University of Crete, Chania, Greece, 8-10 June, 1992, Access soft, Athens, ISBN: 960-220-519-9.
2. Mertikas S.P. (1994). Failure Detection in the Measurements of the Global Positioning System, Monograph, Department of Geomatics Engineering, University of Calgary, Canada.
3. Mertikas S.P. (1999). Remote Sensing and Digital Image Analysis, ION Publishing House, Athens, ISBN 960-405-949-1 (In Greek).
4. Agioutantis Z. & Mertikas S.P. (2003). A Practical Guide for Technical Writing, ION Publishing House, Athens,. ISBN 960-411-394-1(In Greek).
5. Mertikas, SP. (Editor, 2010). "Gravity Geoid and Earth Observation", International Association of Geodesy, IAG Commission 2: Gravity Field, Chania, Crete, Greece, 23-27 June 2008 (International Association of Geodesy Symposia), Vol. 135, DOI: 10.1007/978-3-642-10634, Springer-Verlag Berlin Heidelberg 2010.
6. Mertikas, S. P. (2011). "Geodesy, ground positioning and levelling", in the Encyclopaedia of Solid Earth Geophysics, Article G., edited by Professor Harsh K. Gupta, Springer, New York.

**Recent Publications:**

- Mertikas S. P., A. Daskalakis, I. N. Tziavos , G. S. Vergos, X. Frantzis, A. Tripolitsiotis Papadaki (2015). «First Calibration Results for the SARAL/AltiKa Altimetric Mission using the Gavdos Permanent Facilities », accepted for publication in Marine Geodesy.
- Papadaki E.; A. Tripolitsiotis ; C. Steiakakis ; Z. Agioutantis ; S. Mertikas ; P. Partsinevelos ; P. Schilizzi (2013). « Land movement monitoring at the Mavropigi lignite mine using spaceborne D-InSAR », Proc. SPIE 8795, First International Conference on Remote Sensing and Geoinformation of the Environment (RSCy2013), 87951A (August 5, 2013); <http://dx.doi.org/10.1117/12.2027100> .
- Mertikas, S. P., A. Daskalakis, I. N. Tziavos, O. B. Andersen, G. Vergos, A. Tripolitsiotis, V. Zervakis, X. Frantzis, P. Partsinevelos (2012). "Altimetry, Bathymetry and Geoid variations at the Gavdos permanent Cal/Val Facility", *Advances in Space Research*, Elsevier, <http://dx.doi.org/10.1016/j.asr.2012.10.02> .
- Bonnefond P., J.-D. Desjonqueres, B. Haines, S. Mertikas, C. Watson (2012). "Absolute Calibration of the Topex/Poseidon and Jason Measurement Systems: Twenty Years of Monitoring from Dedicated Sites", Proceedings of the ESA Symposium "20 Years of Progress in Radar Altimetry", Venice Lido, Italy.
- Willis, P., S. Mertikas, D. F. Argus, O. Bock (2012). "DORIS and GPS Monitoring of the Gavdos Calibration Site in Crete", *Advances in Space Research*, Elsevier, <http://dx.doi.org/10.1016/j.asr.2012.08.006> .
- Tserolas, V., S.P. Mertikas, X. Frantzis (2012). "The western Crete geodetic infrastructure: Long-range power-law correlations in GPS time series using Detrended Fluctuation Analysis", *Advances in Space Research*, Elsevier, <http://dx.doi.org/10.1016/j.asr.2012.08.002> .
- Hausleitner W., F. Moser, J.-D. Desjonqueres, F. Boy, N. Picot, J. Weingrill, S. Mertikas, A. Daskalakis (2012). "A new method of precise Jason-2 altimeter calibration using a microwave transponder", *Marine Geodesy*, Volume 35, Supplement 1, 2012, Special Issue: OSTM/Jason-2 Applications—Part 3, <http://dx.doi.org/10.1080/01490419.2012.718239> .
- Tziavos, I. N., G.S. Vergos, S.P. Mertikas, A. Daskalakis, V.N. Grigoriadis, A. Tripolitsiotis (2012). "The contribution of local gravimetric geoid models to the calibration of satellite altimetry data and

- an outlook of the latest GOCE GGM performance in Gavdos", *Advances in Space Research*, Elsevier, <http://dx.doi.org/10.1016/j.asr.2012.06.013>
- Mertikas, S. P., A. Daskalakis, X. Frantzis, A. Tripolitsiotis, P. Partsinevelos, (2011). "Preparatory works for the altimeter calibration of the Sentinel-3 mission using the dedicated calibration site in Crete and Gavdos", *SPIE Symposium on Remote Sensing Paper No. 8175-31*, ERS11-RS02-64, Remote Sensing of the Ocean, Sea Ice, Coastal Waters, and Large Water Regions 2011, DOI: <http://dx.doi.org/10.1117/12.899133>.
- Mertikas, S. P., A. Daskalakis, I. N. Tziavos, G. S. Vergos, X. Frantzis, A. Tripolitsiotis, P. Partsinevelos, D. Andrikopoulos & V. Zervakis (2011). "Ascending and Descending Passes for the Determination of the Altimeter Bias of Jason Satellites using the Gavdos Facility", *Marine Geodesy, Special Issue on OSTM/Jason-2 Calibration/Validation- Part 2*, Volume 34, Issue 3-4, 2011, <http://dx.doi.org/10.1080/01490419.2011.584837>
- Mertikas S. P., A. Daskalakis, V. Tserolas, W. Hausleitner, I. N. Tziavos; G. S. Vergos, V. Zervakis, X. Frantzis, A. Tripolitsiotis, P. Partsinevelos, D. Andrikopoulos (2010). Absolute calibration of Jason satellite radar altimeters at Gavdos Cal/Val facility using independent techniques." *SPIE Symposium on Remote Sensing*, Paper Number: 7825-12, "Remote Sensing of the Ocean, Sea Ice, and Large Water Regions 2010", Toulouse, France, <http://dx.doi.org/10.1117/12.865991> .
- Mertikas, S.P., R. T. Ioannides, I. N. Tziavos, G. S. Vergos, W. Hausleitner, X. Frantzis, A. Tripolitsiotis, P. Partsinevelos, D. Andrikopoulos (2010). Statistical Models and Latest Results in the Determination of the Absolute Bias for the Radar Altimeters of Jason Satellites using the Gavdos facility. *Marine Geodesy*, 33: 1, 114-149, <http://dx.doi.org/10.1080/01490419.2010.488973> .
- Mertikas S. P., A. Daskalakis, V. Tserolas, W. Hausleitner, I. N. Tziavos; G. S. Vergos, V. Zervakis, X. Frantzis, A. Tripolitsiotis, P. Partsinevelos, D. Andrikopoulos (2010). Absolute calibration of Jason satellite radar altimeters at Gavdos Cal/Val facility using independent techniques." *SPIE Symposium on Remote Sensing*, Paper Number: 7825-12, "Remote Sensing of the Ocean, Sea Ice, and Large Water Regions 2010", Toulouse, France, <http://dx.doi.org/10.1117/12.865991> .
- Mertikas, S. P., A. Daskalakis, W. Hausleitner, I.N. Tziavos, G.S. Vergos, V. Zervakis, P. Partsinevelos, X. Frantzis, D. Andrikopoulos, A. Tripolitsiotis (2010). Calibration of satellite radar altimeters at Gavdos Cal/Val facility using three different methodologies, *Proceedings of European Space Agency Living Planet 2010*, Bergen, Norway, 28 Jun–2 Jul 2010.
- Mertikas, S. P., E. Papadaki, Ev. Paleologos (2010). Radar Interferometry Techniques for monitoring subsidence induced by excessive groundwater pumping in Crete, Greece, *Proceedings of European Space Agency Living Planet 2010*, Bergen, Norway, 28 Jun–2 Jul 2010, [http://earth.eo.esa.int/workshops/fringe09/proceedings/papers/p2\\_7mert.pdf](http://earth.eo.esa.int/workshops/fringe09/proceedings/papers/p2_7mert.pdf) .
- Mertikas S.P., E. S. Papadaki (2009). Radar Interferometry for Monitoring Land Subsidence due to over-pumping Ground Water in Crete, Greece", *Proceedings of the European Space Agency Fringe 2009 Workshop*, Advances in the Science and Applications of SAR Interferometry, Frascati, Italy, 30 Nov- 4 Dec, 2009.
- Mertikas S. P., R. T. Ioannides, X. Frantzis, A. Tripolitsiotis, P. Partsinevelos, I. N. Tziavos , G. S. Vergos , Walter Hausleitner (2009). Recent Developments for the Estimation of the altimeter bias for the Jason-1 & 2 satellites using the dedicated calibration site at Gavdos. *SPIE Proceedings, Remote Sensing of the Ocean, Sea, Ice and Large Water Regions*, Vol. 7473, 7473 OC, doi:10.1117/12.830403.
- Mertikas S. P., R. T. Ioannides, X. Frantzis, A. Tripolitsiotis (2009). Estimation of the altimetry bias for the Jason satellites using Gavdos. Final Report of the Ocean Surface Topography Science Team meeting, Seattle, Washington, USA, 22-24 June 2009.
- Mertikas, S.P., R. T. Ioannides, I. N. Tziavos, G. S. Vergos, W. Hausleitner, X. Frantzis, A. Tripolitsiotis, P. Partsinevelos, D. Andrikopoulos(2009). Statistical Models and Latest Results in the



- Determination of the Absolute Bias for the Radar Altimeters of Jason Satellites using the Gavdos facility. *Marine Geodesy*, 33: 1, 114—149, doi: 10.1080/01490419.2010.488973.
- Mertikas, S.P., Ath. Papadopoulos, E. C. Pavlis (2008). "Estimation of the altimeter bias for the Jason satellite using the dedicated calibration site at Gavdos." *SPIE Symposium on Remote Sensing*, Paper Number: 7105-16, "Remote Sensing of the Ocean, Sea Ice, and Large Water Regions 2008", 15-18 September 2008, Cardiff, Wales, United Kingdom.
- Pavlis, E. C., S. Mertikas (2007). "JASON-1 Absolute Calibration Results from the Eastern Mediterranean GAVDOS Project", Ocean Surface Topography Science Team Meeting, Wrest Point, Hobart, Tasmania, Australia.
- Mertikas, S. P. and K. Damianidis (2007). "Monitoring the Quality of GPS Station Coordinates in Real Time", *GPS Solutions*. <http://link.springer.com/article/10.1007%2Fs10291-006-0044-6> , DOI: 10.1007/s10291-006-0044-6, Springer.
- Ieronimidi, E. S. P. Mertikas, D. Hristopoulos (2006). Fusion of Quickbird satellite images for vegetation monitoring in previously mined reclaimed areas, *Proceedings of SPIE Conference*, The International Society for Optical Engineering, Volume 6366, SPIE Paper Number: 6366-39, 11-13 September 2006, Stockholm, Sweden.
- Hristopoulos, D. T., S. P. Mertikas, I. Arhontakis, Brownjohn J. M.W. (2006). "Using GPS for monitoring tall-building response to wind loading: filtering of abrupt changes and low-frequency noise, variography and spectral analysis of displacements", *GPS Solutions*. <http://dx.doi.org/10.1007/s10291-006-0035-7> , Springer.
- Papadopoulos Th. S. P. Mertikas and E. C. Pavlis (2006). The effects of seasonal and atmospherically induced sea level variability in satellite altimeter calibration. Results from the GAVDOS Cal/Val experiment, Symposium on the 15 years of progress in Radar Altimetry, Venice, Italy, 13-18 March 2006.
- Pavlis E.C., S. P. Mertikas and the GAVDOS TEAM (2006). Eastern Mediterranean Dynamics and JASON-1 Altimeter Calibration Results from the GAVDOS Project, presented at the "The Ocean Surface Topography Science Team" (OSTST) meeting, Venice, Italy, March 16-18.
- Papadopoulos Th. S. P. Mertikas, M. N. Tsimplis (2006). Extreme Sea Levels in the Southern Aegean Sea from a Tide Gauge Record and a Surge Model, Poster Presentation, European Geosciences Union 2006, Wien, Austria, 3-7 April.
- Mertikas, S. P. and K. Damianidis (2005). "Performance Evaluation of Algorithms for the On-line GPS Quality Control", Institute of Navigation Conference Proceedings, ION-GNSS-2005 Proceedings, Long Beach, California, USA, 13-16 September, <http://www.ion.org/publications/abstract.cfm?articleID=6302> .
- Mertikas, S. P. and the GAVDOS Team (2004). A Permanent Facility for Calibration/Validation of Satellite Altimetry: GAVDOS, European Geophysical Union, 1st General Assembly, Poster Presentation, EGU04-A-2441 April 2004, Nice, France.
- Mertikas, S.P.; E. C. Pavlis ; I. N. Tziavos ; E. Koutroulis ; K. Palamartchouk ; T. Papadopoulos ; G. S. Vergos (2004). "Permanent facility for calibration/validation of satellite altimetry: GAVDOS", *Proc. SPIE 5569*, Remote Sensing of the Ocean and Sea Ice 2004, 14 (November 16, 2004); <http://dx.doi.org/10.1117/12.566361> .
- Pavlis C. E, K. Evans, B. Beckley, S. P. Mertikas (2004). Eastern Mediterranean sea level, tectonics, environmental monitoring and altimeter calibration from the GAVDOS EU/NASA project. European Geophysical Union, 1st General Assembly, Poster Presentation, EGU04-A-04272, April 2004, Nice, France.
- Mertikas S. P. E. C. Pavlis, I. N. Tziavos, E. Koutroulis, K. Palamartchoul, T. Papadopoulos and G. S. Vergos (2004). Permanent facility for calibration/Validation of satellite altimetry: GAVDOS, *Proceedings*

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**Synergistic Activities:**

- Organized (Chairman) and coordinated an IAG International Symposium on "Gravity, Geoid and Earth Observation 2008", 23-27 June 2008, Technical University of Crete, Chania, Greece. This International Association of Geodesy Symposium attracted more than 250 scientists from Australia, Algeria, Argentina, Austria, Belgium, Bulgaria, Brazil, Canada, China, Croatia, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iran, Italy, Japan, Luxemburg, The Netherlands, Russia, Slovakia, Norway, Poland, Portugal, Korea, Spain, Sweden, Switzerland, Taiwan, United States of America, United Kingdom.
- Chairman for the past 5 years for the SPIE Remote Sensing of the Ocean, Sea Ice, and Large Water Regions.
- Organized (Chairman) and coordinated International Workshop on "Global Positioning Systems in Geosciences", Technical University of Crete, Chania, Greece. The Workshop was in honor of Professor George Veis and attracted more than 100 scientists from United States, Canada, United Kingdom, Germany, Switzerland, France, the Netherlands, Poland, Italy, People's Republic of China, South Africa and Greece.
- Organized with Prof. A. Dermanis (Aristotle University of Thessaloniki) the International Summer School on "Data Analysis and the Statistical Foundations of Geomatics", sponsored by the International Association of Geodesy and the International Society for Photogrammetry and Remote Sensing, Chania, Greece, May 25-30, 1998. Technical University of Crete, Greece.
- Main Speaker/Lecturer at the 1996 Workshop on "The Directions of GPS: The 1996 GPS Lecture Series". Organized by the School of Geomatic Engineering, University of New South Wales, Sydney, Australia. Prof. Richard Langley, University of New Brunswick, Canada and Prof. Alan Dodson, Institute of Engineering Surveying & Space Geodesy, University of Nottingham, England.
- Country Point of Contact (CPOC) for Greece as designated by the civil GPS Service Interface Committee (US Department of Transportation, chartered by the US Government), 1990-1995.
- Member of the Working Group of the International Association of Geodesy, Special Committee on «Marine Positioning». 1992-1996.
- Member of the Working Group of the International Association of Geodesy, Special Study Group 1.154 on «Quality Issues in Real-Time GPS Positioning». 1998-2000.

**Editorial Contributions:** GPS Solutions Editorial Board, Reviewer for the following scientific Journals Bulletin Geodesique, Manuscripta Geodetica, Journal of Geodesy, Marine Geodesy, Geomatica (Canada), International Federation of Automatic Control: Transportation Systems, International Journal of Transportation Research, Part C: Emerging Technologies, IEEE, Transactions on Intelligent Transportation Systems, GPS Solutions (Editorial Board), Geophysical Reviews, ERATOSTHENIS (1989-1991.)

**Recent Research Collaborators and Projects:**

Co-ordinator for the 7th FRAMEWORK PROGRAMME, Marie Curie Actions: International Research Staff Exchange Scheme: "A global network of permanent sites for calibrating satellite altimetry missions." Collaboration with Centre National de la Recherche Scientifique, Observatoire de la Cote d'Azur, France, The First Institute of Oceanography, State Oceanic Administration, China, Universidade do Estado do Amazonas, Brazil. (2013-2015).

Co-ordinator for the 7th FRAMEWORK PROGRAMME, Marie Curie Actions: International Research Staff Exchange Scheme: MELINA: "Development of a global network for the real-time detection of failures and extreme events in natural disasters" Collaboration with Latvijas Universitate, Latvia, Tongji University, Shanghai, China, Hong Kong Polytechnic University, Hong Kong, China. (2013-2016)

- Co-ordinator for ISTRIA Project: “Development of Integrated Systems for the Identification of Rock Falling in Highways”, General Secretariat for Research and Technology. (2013-2015).
- Co-ordinator for the European Space Agency Project: “Sentinel-3 Altimeter Calibration Site”, European Space Research and Technology Center (2013-2015).
- Co-ordinator for the EU Project SOFIA: Enhancement of Crete’s dedicated calibration facility for satellite radar altimeters and seismic deformation monitoring using continuously operating geodetic arrays’, Thematic Priority: FP7-REGPOT-2008-1, Coordination and Support Action (Support Action), Duration 3 years (2009-2011).
- Co-investigator with NASA-UMBC- Joint Center for Earth Systems Technology. Title: “Dynamics of Eastern Mediterranean, Sea Level, and Altimetry Calibration-Validation (DynMSLAC)” Funded by the National Aeronautics and Space Administration, Ocean Surface Topography Science Team, SOT/ST-03-0026-0046, Started on 1-1-2005. Duration 4 years.
- (Geo-Alert): Principal Investigator, “Development of Algorithms for Quality Control of Measurements in deformation monitoring, Collaboration with the Aristotle University of Thessaloniki, (2005-2007).
- KASTELI Cal-Val: Principal Investigator: Extension of the Gavdos permanent calibration/validation facility for radar satellite altimetry and development of a new facility on mainland Crete, Greece», Collaboration with NASA/ Joint Center for Earth Systems Technology, Washington DC, USA.(2006-2008).
- FALASSARNA: Title, Enhancement of Geophysical and Geodetic Networks for an automatic system of warnings for earthquakes and tsunamis, Collaboration with National Observatory of Athens, 2006-2008.

**Mertikas’s Advisors:**

Wells, D.E. (M.Sc.E.); Wells, D.E., R.B. Langley, W. Faig and Dr. A. Kluesberg (Ph.D.), Prof. Klaus-Peter Schwarz (Post-doc). Prof. Chris Rizos (Australia, Fellow).

**Students Advised and Post-Doctors Sponsored:**

- **M.S. students** (total: 2): **Ph.D. students** (total: 3): Post-Doc(3)