

João de Teixeira da Encarnação

Postdoctoral Fellow, Center for Space Research, University of Texas at Austin

Personal Information

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Education

2015 **PhD in Space Geodesy**
[GRS](#)¹⁰, [TU Delft](#)¹¹
Dissertation: *Next-generation satellite gravimetry for measuring mass transport in the Earth system* ¹²
Promotor: Prof. Dr-Ing. habil. Roland Klees ¹³
Supervisor: Dr. Ir. Pavel Ditmar ¹⁴

¹directory.utexas.edu/index.php?q=joao+encarnacao

²nl.linkedin.com/in/joaoencarnacao

³www.researchgate.net/profile/Joao_Encarnacao2

⁴scholar.google.com/citations?user=k2liFwQAAAAJ

⁵orcid.org/0000-0001-6824-2733

⁶www.mendeley.com/profiles/joao-encarnacao4/

⁷www.scopus.com/authid/detail.uri?authorId=15135565900

⁸publons.com/a/782170/

⁹github.com/jgte

¹⁰Geoscience and Remote Sensing, www.tudelft.nl/en/ceg/over-faculteit/departments/geoscience-remote-sensing/

¹¹Delft University of Technology, www.tudelft.nl

¹²tinyurl.com/SatGrav

¹³www.tudelft.nl/en/ceg/over-faculteit/departments/geoscience-remote-sensing/staff/scientific-staff/profdr-ing-habil-r-roland-klees/

¹⁴www.tudelft.nl/citg/over-faculteit/afdelingen/geoscience-remote-sensing/staff/scientific-staff/dr-pg-pavel-ditmar/

2004 **Master of Sciences in Aerospace Engineering**

[AS](#)¹⁵, [TU Delft](#)

Final Thesis: *Numerical Simulation of Launch Vehicles*

Supervisor: Prof. Ir. B.A.C. Ambrosius¹⁶

2000 **Licenciate**¹⁷ in Aerospace Engineering

[IST](#)¹⁸, [UTL](#)¹⁹

5th year concluded at [TU Delft](#), through the ERASMUS program²⁰

Report: *Optimum Aerodynamic Shape for a High Altitude Long Endurance Aerostatic Platform*

Supervisor: Prof. Dr. Ir. Theo van Holten

Academic and Research Experience

Aug. 2016 – present

Research Associate at [CSR](#)²¹, [UTexas](#)²², USA:

- Improvements in the calibration of the accelerometers on-board the [GRACE](#)²³ satellites, in particular in what relates to temperature effects;
- Determination of the (non-linear) long-term trends in the GRACE gravity field solutions and their prediction during the GRACE/GRACE-FO²⁴ gap;
- Time-varying gravity fields estimated from Kinematic Orbits;
- In-house software development in Matlab and Ruby.

¹⁵Astrodynamics and Space missions, www.as.lr.tudelft.nl/

¹⁶www.tudelft.nl/en/staff/b.a.c.ambrosius

¹⁷Licenciatura, en.wikipedia.org/wiki/Licentiate

¹⁸Instituto Superior Técnico, tecnico.ulisboa.pt

¹⁹Technical University of Lisbon, www.ulisboa.pt/en

²⁰www.erasmusprogramme.com

²¹Center for Space Research, www.csr.utexas.edu

²²University of Texas at Austin, www.utexas.edu

²³Gravity Recovery And Climate Experiment

²⁴GRACE Follow On

Sep. 2011 – Jul. 2016

Research Associate at [AS](#), [TU Delft](#), the Netherlands:

- Calibration of the accelerometers on-board the Swarm satellites;
- Improvements in the modelling of non-conservative forces acting on satellites;
- Exploiting DSP²⁵ techniques to merge the measurement of non-gravitational accelerations from different sources: GPS²⁶-driven and accelerometer observations;
- Time-varying gravity fields estimated from Kinematic Orbits;
- Research project: Assessment of Satellite Constellations for Monitoring the Variations in Earth's Gravity Field;
- Research project: GOCE+ Theme3: Air density and wind retrieval using GOCE²⁷ data;
- Research project: Development of the Swarm Level 2 Algorithms and Associated Level 2 Processing Facility;
- In-house software development in Fortran, Matlab and Ruby;
- Student supervision and mentoring.

Jan. 2007 – Dec. 2015

PhD Candidate at [GRS](#), [TU Delft](#), the Netherlands:

- Simulation of future gravimetric satellite missions and noise budget of low-low satellite-to-satellite tracking gravimetric data;
- Impact of orbit position modelling errors in the quality of satellite gravimetric data;
- Retrieval of the high-frequency time-variable gravity field of the Earth with numerous satellites;
- Research project: Assessment of a Next Generation Gravity Mission for Monitoring the Variations of Earth's Gravity Field;
- Research project: Monitoring and Modelling Individual Sources of Mass Distribution and Transport in the Earth System by Means of Satellites;
- In-house software development in Fortran and Matlab;
- Student supervision and mentoring.

²⁵Digital Signal Processing

²⁶Global Positioning System

²⁷Gravity field and steady-state Ocean Circulation Explorer

- Apr. 2005 – Nov. 2006 **Stress Engineer** at Global Technics²⁸, Leiden, the Netherlands:
 - Automated design (for weight and stress minimization) of fuselage panels for the Airbus A380 aircraft (in-house implementation of a tool in C++);
 - Trainees supervision and mentoring.
- Oct. 2004 – Jan. 2005 **Aerospace Engineer** at Delta-Utec²⁹, Leiden, the Netherlands:
 - Contractor Work: Implementation of a Sub-Orbital Optimization Module into the Simulation Tool COLVET (developed in-house at TU Delft).
- Mar. 2004 – Apr. 2004 **Trainee** at the Prins Maurits Laboratorium, TNO³⁰, the Netherlands
Supervisor: Ir. Berry Sanders, Rocket Technology Research Group:
 - Implementation of the Launch Vehicle Simulation and Optimisation Tool COLVET;
 - Numerical Simulations on Laser Propulsion (appendix of MSc thesis);
 - Collaboration with international colleagues (PT and NL) on a ESA³¹-funded project to determine the feasibility of Laser Propulsion.
- Sep. 2001 – Dec. 2001 **Trainee** at ESTEC³², ESA, Noordwijk, the Netherlands
Supervisor: Prof. Wubbo Ockels³³:
 - Collaboration with fellow MSc colleagues on a space mission design project: *Lunar Exploration with Ariane 5*;
 - Simulation of rocket ascent trajectories (implemented a 2D orbit integrator in Matlab);
 - Optimization of rocket trajectories, thrust and attitude program, fuel consumption and payload;
 - Preliminary lunar mission design.

Teaching Experience

At TU Delft, I was required to supervise student projects of a practical nature, every year. This means that I had to direct the work of a small group of students (7 to 9) to a particular

²⁸www.globaltechnics.nl/

²⁹www.delta-utec.com/

³⁰www.tno.nl/

³¹European Space Agency, www.esa.int

³²European Space Research and Technology Centre, www.esa.int/About_Us/ESTEC

³³en.wikipedia.org/wiki/Wubbo_Ockels

objective. It is an activity I enjoy doing and I see the students are enthusiastic about. I always ask them to fill (anonymously) a short list of questions regarding their opinion of the project and my ability as instructor (these answer sheets are available if requested). I always get encouraging and positive feedback.

My senior colleagues always grade my teaching activities as very good to excellent and I am often asked by students to support their application with recommendation letters.

In what concerns teaching large groups of students, I have given lectures to classes of about 30 students, on exceptional occasions, at the request of colleagues.

Additionally, I was a lecturer at the 2017 Summer School On Data Assimilation And Its Applications In Oceanography, Hydrology, Risk & Safety And Reservoir Engineering (cf. data-assimilation.com ³⁴).

I value all teaching my experiences because they were extremely rewarding.

Skills

Communication: Numerous presentations of research results (8 oral and 4 poster)

Teaching:

- Student supervision in the context of individual and group assignments
- Introductory lectures to the practical projects

Theoretical:

- Parametric inversion
- Statistical analysis
- Stochastic modelling
- Spherical harmonic functions
- Digital signal processing
- Coordinate transformations/quaternion arithmetic
- Fourier analysis

Articles review: Successfully completed the review of 8 scientific articles, cf. [Publons](https://publons.com/a/782170/) ³⁵

Computational:

- Algorithm development and implementation
- Data management, analysis and visualisation
- Automation, robustness, fault recovery
- Problem resolution/solution discovery/hacking

Software: Latex, MS Office, Git, SVN

³⁴ data-assimilation.com

³⁵ publons.com/a/782170/

- Programming:
- 1996 – present: Bash
 - 1998 – present: Matlab
 - 2002 – present: Fortran
 - 2006 – 2008: C/C++
 - 2011 – present: Ruby
 - 2015 – present: Python

OSs³⁶: OSX, MS Windows, Unix/Linux

Fields of Interest

Space geodesy
Earth System Science
Mathematical Modelling
Digital signal processing
Numerical Simulation
Big data
Rocket Motion and Orbital Mechanics
System Analysis and Design
Aerodynamics
Structural Mechanics

Collaborations

- 2017 – present Collaboration with Dr. Guillaume Ramillien from [CNRS](#)³⁷ and Dr. Aleš Bezděk the [ASU](#)³⁸ of the [AVCR](#)³⁹ to **drive surface mass variations directly from “reduced” gravimetric data** (i.e. observations “cleaned” of non-gravitational and trivial gravitational effects).
- 2017 – present Collaboration with Dr. Noble Hatten and Dr. Dae Lee of the [CSR](#), [UTexas](#) for the **development of a CubeSat architecture that replicates the gravimetric capabilities of the GRACE satellites**.
- 2016 – present International collaboration with Prof. Luis Rocha of [UMinho](#)⁴⁰ and Dr. Dae Lee of the [CSR](#), [UTexas](#) for the **development of a MEMS-based space accelerometer as a first step towards the nano-gravimetric satellite framework**.

³⁶Operating Systems

³⁷Centre National de la Recherche Scientifique, www.cnrs.fr/index.php

³⁸Astronomical Institute, www.asu.cas.cz/en

³⁹Czech Academy of Sciences, www.avcr.cz/en/

⁴⁰Universidade do Minho, www.uminho.pt/EN

- 2015 – present International collaboration with Prof. Torsten Mayer-Gürr of the IfG⁴¹ of the TUG⁴², Dr. Aleš Bezděk of the ASU of the AVCR⁴³, Prof. Adrian Jäggi of the AIUB⁴⁴, Prof. Pieter Visser of the Aerospace Faculty⁴⁵ of the TU Delft and Prof. C.K. Shum of the SES⁴⁶ of the OSU⁴⁷ for the **study of the time-variable gravity field of the Earth estimated from GPS data collected by the Swarm Satellite mission**⁴⁸. Within the scope of this project, we submitted a grant application with very positive reviews (Ref. ESA AO/1-7927/14/NL/MP), and have recently been awarded funding under the ITT posted by the ESA-funded aDISC consortium⁴⁹
- 2014 – present Collaboration with TU Delft on the DopTrack project⁵⁰, consisting of a **satellite tracking radio station that exploits the Doppler effect**; co-initiated and promoted the project, secured departmental funding, selected and assembled the hardware, developed software, engaged students and mentored practical undergraduate projects.

Research Projects

- 2013 – 2015 Assessment of Satellite Constellations for Monitoring the Variations in Earth's Gravity Field (ESA contract 4000108663/13/NL/MV)
- 2013 GOCE+ Theme3: Air density and wind retrieval using GOCE data (ESA contract 400010284/11/NL/EL)
- 2011 – 2016 Development of the Swarm Level 2 Algorithms and Associated Level 2 Processing Facility (ESA Contract 4000102140/10/NL/JA)
- 2010 Assessment of a Next Generation Gravity Mission for Monitoring the Variations of Earth's Gravity Field (ESTEC contract 22643/09/NL/AF)
- 2008 Monitoring and Modelling Individual Sources of Mass Distribution and Transport in the Earth System by Means of Satellites (ESA contract 20403)

Journal publications

1. Bezděk, A., Sebera, J., **Encarnação, J. T.**, Klokočník, J., (2016). "Time-variable gravity fields derived from GPS tracking of Swarm". In: *Geophys. J. Int.* 205.3, pp. 1665–1669. DOI: [10.1093/gji/ggw094](https://doi.org/10.1093/gji/ggw094).
2. Siemes, C., **de Teixeira da Encarnação, J.**, Doornbos, E., IJssel, J., Kraus, J., Perešty, R., Grunwaldt, L., Apfelbaum, G., Flury, J., Holmdahl Olsen, P. E., (2016). "Swarm

⁴¹Institute of Geodesy, www.itsg.tugraz.at

⁴²Graz University of Technology, www.tugraz.at

⁴³Czech Academy of Sciences, www.avcr.cz/en/

⁴⁴Astronomical Institute of the University of Bern, www.aiub.unibe.ch

⁴⁵www.lr.tudelft.nl

⁴⁶School of Earth Science, earthsciences.osu.edu

⁴⁷Ohio State University, www.osu.edu

⁴⁸earth.esa.int/web/guest/missions/esa-operational-eo-missions/swarm

⁴⁹tinyurl.com/SwarmGrav

⁵⁰doptrack.tudelft.nl

accelerometer data processing from raw accelerations to thermospheric neutral densities". In: *Earth, Planets Sp.* 68.1, p. 92. DOI: [10.1186/s40623-016-0474-5](https://doi.org/10.1186/s40623-016-0474-5).

3. **Teixeira da Encarnação, J.**, Arnold, D., Bezděk, A., Dahle, C., Doornbos, E., IJssel, J., Jäggi, A., Mayer-Gürr, T., Sebera, J., Visser, P., Zehentner, N., (2016). "Gravity field models derived from Swarm GPS data". In: *Earth, Planets Sp.* 68.1, p. 127. DOI: [10.1186/s40623-016-0499-9](https://doi.org/10.1186/s40623-016-0499-9).
4. IJssel, J., **Encarnação, J.**, Doornbos, E., Visser, P., (2015). "Precise science orbits for the Swarm satellite constellation". In: *Adv. Sp. Res.* 56.6, pp. 1042–1055. DOI: [10.1016/j.asr.2015.06.002](https://doi.org/10.1016/j.asr.2015.06.002).
5. Hashemi Farahani, H., Ditmar, P., Klees, R., **Encarnação, J.**, Liu, X., Zhao, Q., Guo, J., (2013). "Validation of static gravity field models using GRACE K-band ranging and GOCE gradiometry data". In: *Geophys. J. Int.* 194.2, pp. 751–771. DOI: [10.1093/gji/ggt149](https://doi.org/10.1093/gji/ggt149).
6. Olsen, N., Alken, P., Beggan, C. D., Chulliat, A., Doornbos, E., **Encarnação, J.**, Floberghagen, R., Friis-Christensen, E. A., Hamilton, B., Hulot, G., IJssel, J., Kuvshinov, A. V. A., Lesur, V., Luhr, H., Macmillan, S., Maus, S., Olsen, P. E. H., Park, J., Plank, G., Püthe, C., Ritter, P., Rother, M., Sabaka, T. J., Stolle, C., Thebault, E., Thomson, A. W. P., Tøffner-Clausen, L., Velimsky, J., Visser, P. N. A. M., Luehr, H., Noja, M., Püthe, C., Rauberg, J., Schachtschneider, R., Sirol, O., Tøffner-Clausen, L., Vigneron, P., Püthe, C., Velimský, J., (2013). "The Swarm Satellite Constellation Application and Research Facility (SCARF) and Swarm data products". In: *Earth, Planets Sp.* 65.11, p. 100. DOI: [10.5047/eps.2013.07.001](https://doi.org/10.5047/eps.2013.07.001).
7. Visser, P., Doornbos, E., IJssel, J., **Teixeira da Encarnação, J.**, (2013). "Thermospheric density and wind retrieval from Swarm observations". In: *Earth, Planets Sp.* 65.11, pp. 1319–1331. DOI: [10.5047/eps.2013.08.003](https://doi.org/10.5047/eps.2013.08.003).
8. Ditmar, P., **Encarnação, J.**, Hashemi Farahani, H., (2012). "Understanding data noise in gravity field recovery on the basis of inter-satellite ranging measurements acquired by the satellite gravimetry mission GRACE". In: *J. Geod.* 86.6, pp. 441–465. DOI: [10.1007/s00190-011-0531-6](https://doi.org/10.1007/s00190-011-0531-6).
9. Gunter, B. C., **Encarnacao, J.**, Ditmar, P., Klees, R., (2011). "Using Satellite Constellations for Improved Determination of Earth's Time-Variable Gravity". In: *J. Spacecr. Rockets* 48.2, pp. 368–377. DOI: [10.2514/1.50926](https://doi.org/10.2514/1.50926).
10. Resendes, D. P., Mota, S., Mendonça, J. T., Sanders, B., **Encarnação, J.**, Del Amo, J. G., (2007). "Laser Propulsion for Ground Launch". en. In: *J. Propuls. Power* 23.1, pp. 73–80. DOI: [10.2514/1.24527](https://doi.org/10.2514/1.24527).

Conference proceedings (peer-reviewed)

1. Gunter, B. C., **Encarnação, J.**, Ditmar, P., Klees, R., Van Barneveld, P. W. L., Visser, P., (2012). "Deriving global time-variable gravity from precise orbits of the Iridium NEXT constellation". In: *Adv. Astronaut. Sci.* Vol. 142, pp. 2087–2096. URL: <http://www.univelt.com/book=3354>.

2. Gunter, B. C., Ditmar, P., **Encarnação, J.**, (2010). "The determination of time variable gravity from a constellation of non-dedicated satellites". In: *Adv. Astronaut. Sci.* Pittsburgh, pp. 1999–2007. URL: <http://www.univelt.com/book=1349>.
3. Gunter, B. C., **Encarnação, J.**, Ditmar, P., Klees, R., (2009). "The use of satellite constellations and formations for future gravity field missions". In: *Adv. Astronaut. Sci.* Savannah, pp. 1357–1368. URL: <http://www.univelt.com/book=1451>.
4. **Encarnação, J.**, Ditmar, P., Liu, X., (2008). "Analysis of Satellite Formations in the Context of Gravity Field Retrieval". In: *3rd Int. Symp. Form. Flying, Mission. Technol.* Ed. by K Fletcher. Vol. ESA SP-654. Rijswijk: ESA Communication Production Office, pp. 1–9. URL: [https://pure.tudelft.nl/portal/en/publications/analysis-of-satellite-formations-in-the-context-of-gravity-field-retrieval\(1489930e-7dbd-4a4b-9bf2-f15b8380ad12\).html](https://pure.tudelft.nl/portal/en/publications/analysis-of-satellite-formations-in-the-context-of-gravity-field-retrieval(1489930e-7dbd-4a4b-9bf2-f15b8380ad12).html).
5. **Encarnação, J.**, Klees, R., Zapreeva, E., Ditmar, P., Kusche, J., (2008). "Influence of Hydrology-Related Temporal Aliasing on the Quality of Monthly Models Derived from GRACE Satellite Gravimetric Data". In: *Obs. our Chang. Earth* 133, pp. 323–328. DOI: [10.1007/978-3-540-85426-5_38](https://doi.org/10.1007/978-3-540-85426-5_38).
6. Resendes, D. P., Mota, S., Mendonça, J. T., Sanders, B., **Encarnação, J.**, Amo, J. G., Myrabo, L. N., (2006). "Laser Propulsion for ESA Missions: Ground to Orbit Launch Project Overview — Part 1". en. In: *AIP Conf. Proc.* Vol. 830. 1. AIP, pp. 576–587. DOI: [10.1063/1.2203299](https://doi.org/10.1063/1.2203299).
7. Resendes, D. P., Mota, S., Mendonça, J. T., Sanders, B., **Encarnação, J.**, Amo, J. G., Prins, T. N. O., (2005). "Laser Propulsion for Ground to Orbit Launch". In: *29th Int. Electr. Propuls. Conf. IEPC-2005-310*, pp. 1–8. URL: http://erps.spacegrant.org/uploads/images/images/iepc_articledownload_1988-2007/2005index/310.pdf.

Invited Presentations

1. **Teixeira Encarnação, J.** (2017). "Satellite Gravimetry". In: *Summer Sch. Data Assim. its Appl. Oceanogr. Hydrol. Risk Saf. Reserv. Eng.* Sibiu, Romania. URL: <http://data-assimilation.com>.
2. **Teixeira Encarnação, J.**, Arnold, D., Bezdek, A., Dahle, C., Doornbos, E., Ijssel, J. V. D., Jäggi, A., Mayer-gürr, T., Sebera, J., Visser, P., Zehentner, N., (2015). "First monthly gravity field solutions derived from GPS orbits of Swarm". In: *AGU Fall Meet. Abstr.* San Francisco, CA, USA. URL: <https://agu.confex.com/agu/fm15/webprogram/Paper71877.html>.

Conference Attendance

1. **Teixeira Encarnação, J.**, Arnold, D., Bezdek, A., Dahle, C., Doornbos, E., Ijssel, J. V. D., Jäggi, A., Mayer-gürr, T., Sebera, J., Shum, C., Visser, P., Zehentner, N., (2017a). "Gravity field models derived from Swarm GPS data". In: *EGU Gen. Assem.* Vienna, Austria. URL: https://www.researchgate.net/publication/319914485_Gravity_field_models_derived_from_Swarm_GPS_data.
2. **Teixeira Encarnação, J.**, Arnold, D., Bezdek, A., Dahle, C., Jäggi, A., Mayer-gürr, T., Sebera, J., Shum, C., Visser, P., Zehentner, N., (2017b). "Swarm as an Observing Platform for Large Surface Mass Transport Processes". In: *4th Swarm Sci. Meet.* Banff, Canada. URL: <http://tinyurl.com/Swarm-Banff>.
3. **Teixeira Encarnação, J.**, Arnold, D., Bezdek, A., Dahle, C., Jäggi, A., Mayer-gürr, T., Sebera, J., Visser, P., Zehentner, N., (2016). "Gravity field models derived from Swarm GPS data". In: *EGU Gen. Assem.* Vienna, Austria. DOI: [10.13140/RG.2.1.3909.4642](https://doi.org/10.13140/RG.2.1.3909.4642).
4. **Encarnacao, J.**, Ditmar, P., Klees, R., (2015). "Impact of Orbit Position Errors on Future Satellite Gravity Models". In: *Am. Geophys. Union, Fall Meet. 2015.* G31B-1114. URL: <http://adsabs.harvard.edu/abs/2015AGUFM.G31B1114E>.
5. **Teixeira Encarnação, J.**, Ijssel, J., Doornbos, E., Visser, P. N., (2015). "Frequency domain combination of POD-driven and measured accelerations". In: *5th Swarm Data Qual. Work.* Paris, France.
6. **Teixeira Encarnação, J. G.**, Ijssel, J., Doornbos, E., Visser, P., (2014a). "POD-assisted calibration of Swarms Accelerometer Data". In: *4th Swarm Data Qual. Work.* December. Postdam, Germany.
7. **Teixeira Encarnação, J.**, Doornbos, E., Ijssel, J., Visser, P. N., (2014b). "Combination of Swarm's Uncalibrated Accelerometer Data with POD-Based Accelerometry". In: *3rd Swarm Sci. Meet.* Copenhagen, Denmark, p. 2.
8. **Teixeira Encarnação, J.**, Ijssel, J., Doornbos, E., Visser, P. N., (2014c). "Preliminary analysis of accelerometer data". In: *2nd Swarm Data Qual. Work.* Rome, Italy.
9. **Encarnação, J.**, Ditmar, P., Liu, X., (2008). "Analysis of Satellite Formations in the Context of Gravity Field Retrieval". In: *3rd Int. Symp. Form. Flying, Mission. Technol.* Ed. by K Fletcher. Vol. ESA SP-654. Rijswijk: ESA Communication Production Office, pp. 1-9. URL: [https://pure.tudelft.nl/portal/en/publications/analysis-of-satellite-formations-in-the-context-of-gravity-field-retrieval\(1489930e-7dbd-4a4b-9bf2-f15b8380ad12\).html](https://pure.tudelft.nl/portal/en/publications/analysis-of-satellite-formations-in-the-context-of-gravity-field-retrieval(1489930e-7dbd-4a4b-9bf2-f15b8380ad12).html).
10. **Teixeira Encarnação, J.**, Ditmar, P. G., Klees, R., (2008). "Spectral analysis of positioning modelling errors in gravimetric data". In: *IAG Symp. Gravity, Geoid, Earth Obs.* Chania, Greece.
11. **Teixeira Encarnação, J. G.**, Ditmar, P. G., Klees, R., (2007a). "Temporal aliasing in GRACE monthly solutions". In: *Intergeo.* Leipzig, Germany.

12. **Teixeira Encarnação, J.**, Ditmar, P. G., Klees, R., (2007b). "Influence of hydrology-related temporal aliasing on the quality of monthly models derived from GRACE satellite gravimetric data". In: *VMSG Symp.* Utrecht, The Netherlands.
13. **Encarnação, J.** (2002). "Single Stage To Orbit Minimum Requirements Through Numerical Simulation". In: *34th COSPAR Sci. Assem. Second World Sp. Congr.* Houston, TX, USA: IAF. URL: <http://adsabs.harvard.edu/abs/2002iaf.confE.984T>.

Conference Contributions

1. Doornbos, E., **de Teixeira da Encarnação, t.**, IJss, J., Siemes, C., Grunwaldt, L., Peresty, R., Kraus, J., Flury, J., Apelbaum, G., Olsen, P. E. H., (2016). "Thermospheric neutral densities derived from Swarm accelerometer and GPS data". In: *ESA Living Planet Symposium 2016*.
2. Jäggi, A., Meyer, U., Jean, Y., Susnik, A., Dach, R., Weigelt, M., Dam, T., Li, Z., Chen, Q., Flechtner, F., (2016). "European Gravity Service for Improved Emergency Management-Status and Project Highlights". In: *International Association of Geodesy Symposia*. Springer, p. 1.
3. Siemes, C., Grunwaldt, L., Peresty, R., Kraus, J., Doornbos, E., **de Teixeira da Encarnação, t.**, IJssel, J., Flury, J., Apelbaum, G., Olsen, P. E. H., (2016). "Improvements of the Swarm Accelerometer Data Processing". In: *ESA Living Planet Symposium 2016*.
4. Astafyeva, E., Zakharenkova, I., Foerster, M., Doornbos, E., **de Teixeira da Encarnação, t.**, Siemes, C., (2015). "Ionospheric and Thermospheric Response to the 2015 St. Patrick's Day Storm: a Global Multi-Instrumental Overview". In: *AGU Fall Meeting Abstracts*.
5. Doornbos, E., Siemes, C., **de Teixeira da Encarnação, t.**, Perestý, R., Grunwaldt, L., Kraus, J., Holmdahl Olsen, P., IJssel, J., Flury, J., Apelbaum, G., (2015). "Processing of Swarm Accelerometer Data into Thermospheric Neutral Densities". In: *AGU Fall Meeting Abstracts*.
6. Siemes, C., **Encarnacao, J.**, Doornbos, E., Perestý, R., Grunwaldt, L., Kraus, J., Olsen, P. E. H., IJssel, J., Flury, J., Apelbaum, G., (2015). "Processing of Swarm Accelerometer Data into Thermospheric Neutral Densities". In: *AGU Fall Meet. Abstr.* Abstract SA31D-2371. San Francisco, CA, USA. URL: <http://abstractsearch.agu.org/meetings/2015/FM/SA31D-2371.html>.
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Miscellaneous Contributions

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Languages

	Speaking	Reading	Writing
Portuguese		mother tongue	
English ⁵¹	excellent	excellent	excellent
Spanish	good	good	fair
Italian	good	good	fair
Dutch	fair	fair	limited
French	fair	fair	limited

Personal development

- Sep. 2015 Scientific Writing, Sören Johnson, [TU Delft](#)
- Jul. 2017 Leading without formal authority, Emil Kresl, [UTexas](#)
- Jul. 2017 Meeting effectiveness, Emil Kresl, [UTexas](#)
- Sep. 2017 Dealing with Difficult People, Jeff Stellmach, [UTexas](#)

Sports

- 1991 – 2009 Basketball
- April 2006 Finalist of the 26th International Fortis Marathon of Rotterdam⁵³
- September 2016 - present Sailing

Other Activities

- 1991 – 2001 Scout at the 92nd Scout-group of the Association of Portuguese Escoteiros⁵⁴
- 1993 – present Radio Amateur, call sign CT3IU, class B

⁵³www.fortismarathonrotterdam.nl/

⁵⁴www.aep.pt

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The PDF ⁵⁵ and print-ready ⁵⁶ versions this document are available on-line.

⁵⁵jgte.github.io/cv/cv_jgte.pdf

⁵⁶jgte.github.io/cv/cv_jgte_print.pdf