

João de Teixeira da Encarnação

Curriculum Vitae

Klyuwerweg 1
2629 HS, Delft
the Netherlands
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BIOGRAPHY

João de Teixeira da Encarnação was born in 1977 in Funchal, Portugal. He moved to Lisbon in 1996 to pursue his university degree at the Instituto Superior Técnico. In 1999 he enrolled at the Delft University of Technology, in the Netherlands, as Erasmus student, where he finalized his MSc on Aerospace engineering in 2004. He obtained his PhD in Space Geodesy in 2015, on the topic of Next Generation Gravimetric Satellite missions. He was a post-doctoral fellow at the Center for Space Research, in the University of Texas at Austin, U.S., from 2016, where he became an Associate Scientist on 2018. Since 2020, he is Assistant Professor at the Delft University of Technology.

EDUCATION

- 2015 **Ph.D. in Space Geodesy**
Geoscience and Remote Sensing ([GRS](#)), Delft University of Technology ([TU Delft](#))
Next-generation satellite gravimetry for measuring mass transport in the Earth system
Committee: [Roland Klees](#) (Promotor), [Pavel Ditmar](#) (Supervisor), [Bert Vermeersen](#), [Byron Tapley](#), [A. Jäggi](#), [Frank Flechtner](#), [Ramon Hanssen](#)
- 2004 **M.Sc. in Aerospace Engineering**
Astrodynamics and Space missions ([AS](#)), [TU Delft](#)
Numerical Simulation of Launch Vehicles
Supervisor: [Boudewijn Ambrosius](#)
- 2000 **Lic. in Aerospace Engineering**
Instituto Superior Técnico ([IST](#)), Universidade de Lisboa ([ULisboa](#))
Optimum Aerodynamic Shape for a High Altitude Long Endurance Aerostatic Platform
Supervisor: [Theo van Holten](#) ([TU Delft](#), under the [Erasmus Programme](#))

PROFESSIONAL EXPERIENCE

- | | |
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| 2021 – present | Assistant Professor, Astrodynamics and Space missions, TU Delft , the Netherlands |
| 2018 – 2020 | Research Engineering/Scientist Associate, Center for Space Research (CSR), University of Texas at Austin (UTexas), USA |
| 2016 – 2018 | Postdoctoral Fellow, CSR , UTexas , USA |

2011 – 2016	Research Associate, Astrodynamics and Space missions, TU Delft , the Netherlands
2007 – 2015	PhD Candidate, GRS , TU Delft , the Netherlands
2005 – 2006	Stress Engineer, Global Technics, Leiden, the Netherlands
2004 – 2005	Aerospace Engineer, Delta-Utec , Leiden, the Netherlands

PUBLICATIONS

Refereed Journal publications

- 2022 Cesare, S., Dionisio, S., Saponara, M., Bravo-Berguño, D., Massotti, L., **Teixeira da Encarnação, J.**, Christophe, B., “Drag and Attitude Control for the Next Generation Gravity Mission”. In: *Remote Sensing* 14.12, p. 2916. DOI: [10.3390/rs14122916](#).
- 2021 Zhang, C., Shum, C. K., Bezděk, A., Bevis, M., **Teixeira da Encarnação, J.**, Tapley, B. D., Zhang, Y., Su, X., Shen, Q., “Rapid Mass Loss in West Antarctica Revealed by Swarm Gravimetry in the Absence of GRACE”. In: *Geophysical Research Letters* 48.23. DOI: [10.1029/2021GL095141](#).
- 2020 **Teixeira da Encarnação, J.**, Save, H., Tapley, B., Rim, H.-J., “Accelerometer Parameterization and the Quality of Gravity Recovery and Climate Experiment Solutions”. In: *Journal of Spacecraft and Rockets* 57.4, pp. 740–752. DOI: [10.2514/1.A34639](#).
- 2016 Bezděk, A., Sebera, J., **Teixeira da Encarnação, J.**, Klokočník, J., “Time-variable gravity fields derived from GPS tracking of Swarm”. In: *Geophysical Journal International* 205.3, pp. 1665–1669. DOI: [10.1093/gji/ggw094](#).
- 2016 Siemes, C., **Teixeira da Encarnação, J.**, Doornbos, E., IJssel, J., Kraus, J., Perešty, R., Grunwaldt, L., Apelbaum, G., Flury, J., Holmdahl Olsen, P. E., “Swarm accelerometer data processing from raw accelerations to thermospheric neutral densities”. In: *Earth, Planets and Space* 68.1, p. 92. DOI: [10.1186/s40623-016-0474-5](#).
- 2016 **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., “Gravity field models derived from Swarm GPS data”. In: *Earth, Planets and Space* 68.1, p. 127. DOI: [10.1186/s40623-016-0499-9](#).
- 2015 IJssel, J., **Encarnação, J.**, Doornbos, E., Visser, P., “Precise science orbits for the Swarm satellite constellation”. In: *Advances in Space Research* 56.6, pp. 1042–1055. DOI: [10.1016/j.asr.2015.06.002](#).
- 2013 Hashemi Farahani, H., Ditmar, P., Klees, R., **Teixeira da Encarnação, J.**, Liu, X., Zhao, Q., Guo, J., “Validation of static gravity field models using GRACE K-band ranging and GOCE gradiometry data”. In: *Geophysical Journal International* 194.2, pp. 751–771. DOI: [10.1093/gji/ggt149](#).

- 2013 Olsen, N., Friis-Christensen, E., Floberghagen, R., Alken, P., Beggan, C. D., Chulliat, A., Doornbos, E., **Encarnação, J. T.**, Hamilton, B., Hulot, G., IJssel, J., Kuvshinov, A., Lesur, V., Lühr, H., Macmillan, S., Maus, S., Noja, M., Olsen, P. E. H., Park, J., Plank, G., Püthe, C., Rauberg, J., Ritter, P., Rother, M., Sabaka, T. J., Schachtschneider, R., Sirol, O., Stolle, C., Thébaud, E., Thomson, A. W. P., Tøffner-Clausen, L., Velínský, J., Vigneron, P., Visser, P. N., "The Swarm Satellite Constellation Application and Research Facility (SCARF) and Swarm data products". In: *Earth, Planets and Space* 65.11, pp. 1189–1200. DOI: [10 . 5047/eps.2013.07.001](https://doi.org/10.5047/eps.2013.07.001).
- 2013 Visser, P., Doornbos, E., IJssel, J., **Teixeira da Encarnação, J.**, "Thermospheric density and wind retrieval from Swarm observations". In: *Earth, Planets and Space* 65.11, pp. 1319–1331. DOI: [10.5047/eps.2013.08.003](https://doi.org/10.5047/eps.2013.08.003).
- 2012 Ditmar, P., **Teixeira da Encarnação, J.**, Hashemi Farahani, H., "Understanding data noise in gravity field recovery on the basis of inter-satellite ranging measurements acquired by the satellite gravimetry mission GRACE". In: *Journal of Geodesy* 86.6, pp. 441–465. DOI: [10.1007/s00190-011-0531-6](https://doi.org/10.1007/s00190-011-0531-6).
- 2011 Gunter, B. C., **Encarnacao, J.**, Ditmar, P., Klees, R., "Using Satellite Constellations for Improved Determination of Earth's Time-Variable Gravity". In: *Journal of Spacecraft and Rockets* 48.2, pp. 368–377. DOI: [10.2514/1.50926](https://doi.org/10.2514/1.50926).
- 2007 Resendes, D. P., Mota, S., Mendonça, J. T., Sanders, B., **Encarnação, J.**, Del Amo, J. G., "Laser Propulsion for Ground Launch". en. In: *Journal of Propulsion and Power* 23.1, pp. 73–80. DOI: [10.2514/1.24527](https://doi.org/10.2514/1.24527).

Peer Reviewed Conference Proceedings

- 2022 Esteves, D., Hormigo, T., **Encarnação, J.**, Dias, R., Neves, D., Oliveira, J., Câmara, F., "Miniaturized Prototype For Gravity Field Assessment Using Distributed Earth-orbiting Assets". In: *The 45 Symposium* 2022. 1. Vilamoura, Portugal: ESA Conference Bureau, pp. 1–15.
- 2022 Garcia, I. S., Elhawash, A. M., Cabral, J., Hormigo, T., **Teixeira da Encarnação, J.**, Alves, F. S., Dias, R. A., "Ultra-Low Noise, High-Sensitivity Mems Accelerometer for Satellite Gravimetry". In: *Hilton Headh*, pp. 4–7.
- 2022 Garcia, I. S., Santos, D. E., Queiroz, J. B., **Encarnação, J. T.**, Hormigo, T., Cabral, J., Alves, F. S., Dias, R. A., "Ultra-high Sensitivity Pull-in Time MEMS Accelerometer For Satellite Gravimetry". In: *The 22nd International Conference on Solid-State Sensors, Actuators and Microsystems*. Kyoto, Japan: Transducers 2023, pp. 2–5.
- 2021 Hormigo, T., Esteves, D., Neves, D., Câmara, F., **Encarnação, J.**, "A Distributed Nano-satellite Constellation For Gravity Field Recovery And Atmospheric Neutral Density Estimation". In: *28th IAA SYMPOSIUM ON SMALL SATELLITE MISSIONS*. 7, pp. 1–2.
- 2012 Gunter, B. C., **Encarnação, J.**, Ditmar, P., Klees, R., Van Barneveld, P. W. L., Visser, P., "Deriving global time-variable gravity from precise orbits of the Iridium NEXT constellation". In: *Advances in the Astronautical Sciences*. Vol. 142, pp. 2087–2096.
- 2009 Gunter, B. C., Ditmar, P., **Encarnação, J.**, "The determination of time variable gravity from a constellation of non-dedicated satellites". In: *Advances in the Astronautical Sciences*. Pittsburgh, pp. 1999–2007.

- 2009 Gunter, B. C., **Encarnação, J.**, Ditmar, P., Klees, R., “The use of satellite constellations and formations for future gravity field missions”. In: *Advances in the Astronautical Sciences*. Savannah, pp. 1357–1368.
- 2008 **Encarnação, J.**, Ditmar, P., Liu, X., “Analysis of Satellite Formations in the Context of Gravity Field Retrieval”. In: *3rd International Symposium on Formation Flying, Missions and Technologies (SP-654)*. Ed. by K Fletcher. ESA SP-654. Rijswijk, the Netherlands: 23-25 Apr.
- 2008 **Encarnação, J.**, Klees, R., Zapreeva, E., Ditmar, P., Kusche, J., “Influence of Hydrology-Related Temporal Aliasing on the Quality of Monthly Models Derived from GRACE Satellite Gravimetric Data”. In: *Observing our Changing Earth*. Vol. 133. Berlin, Heidelberg: Springer Berlin Heidelberg, pp. 323–328. DOI: [10.1007/978-3-540-85426-5_38](https://doi.org/10.1007/978-3-540-85426-5_38).
- 2006 Resendes, D. P., Mota, S., Mendonça, J. T., Sanders, B., **Encarnação, J.**, Amo, J. G., Myrabo, L. N., “Laser Propulsion for ESA Missions: Ground to Orbit Launch Project Overview — Part 1”. en. In: *AIP Conference Proceedings*. Vol. 830. 1. AIP, pp. 576–587. DOI: [10.1063/1.2203299](https://doi.org/10.1063/1.2203299).
- 2005 Resendes, D. P., Mota, S., Mendonça, J. T., Sanders, B., **Encarnação, J.**, Del Amo, J. G., “Laser Propulsion for Ground to Orbit Launch”. In: *29th International Electric Propulsion Conference*. IEPC-2005-310.
- 2001 **Teixeira Encarnação, J. T.**, Ockels, W. J., “Single Stage to Orbit Minimum Requirement Through Numerical Simulation”. In: *Proceedings of the 53rd International Astronautical Congress*. Houston, TX, USA: International Astronautical Federation.

Other Publications

- 2015 Sneeuw, N., Iran-Pour, S., Reubelt, T., Sneeuw, N., Daras, I., Murböck, M., Gruber, T., Pail, R., Weigelt, M., Dam, T., Visser, P., **Teixeira da Encarnação, J.**, IJssel, J., Tonetti, S., Cornara, S., Cesare, S., *Assessment of Satellite Constellations for Monitoring the Variations in Earth Gravity Field “SC4MGV”*. Tech. rep. European Space Agency.
- 2010 Anselmi, A., Cesare, S., Visser, P., Van Dam, T., Sneeuw, N., Gruber, T., Altes, B., Christophe, B., Cossu, F., Ditmar, P., Murböck, M., Parisch, M., Renard, M., Reubelt, T., Sechi, G., **Teixeira da Encarnação, J.**, *Assessment of a next Generation Gravity Mission for Monitoring the Variations of Earth’s Gravity Field*. Tech. rep. Thales Alenia Space report SD-RP-AI-0668: ESA Contract No. 22643/09/NL/AF.

AWARDS

- 2017 H2020 Marie Skłodowska-Curie Individual Fellowship [Seal of Excellent](#) to the proposal on [Direct Gravimetric data assimilation into Geophysical models](#)

GRANTS

- | | |
|-----------------------|--|
| Sep. 2017 – May 2019 | <p><i>Multi-approach gravity field models from Swarm GPS data</i>
 European Space Agency (Noordwijk, Netherlands)
 100k €
 DISC contract SW-CO-DTU-GS-111(part of ESA contract 4000109587/13/I-NB)</p> |
| May 2019 – Jun. 2020 | <p><i>Transfer To Operation of production of EGF_SHA_2_ products</i>
 European Space Agency (Noordwijk, Netherlands)
 73k €
 DISC contract SW-CN-DTU-GS-027(part of ESA contract 4000109587/13/I-NB)</p> |
| Feb. 2020 – Feb. 2023 | <p><i>uPGRADE - Miniaturized Prototype for GRavity field Assessment using Distributed Earth-orbiting assets</i>
 Fundação para a Ciência e a Tecnologia (Lisbon, Portugal)
 900k € (in addition to 1.4M € for Portuguese project partners)
 Funding opportunity: AAC 04/SI/2019, project nr: 45927</p> |

INVITED PRESENTATIONS

- 2017 **Teixeira da Encarnação, J.**, “Satellite Gravimetry”. In: *Summer School On Data Assimilation and its Applications In Oceanography, Hydrology, Risk, Safety And Reservoir Engineering*. Sibiu, Romania.
- 2015 **Teixeira da 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., “First monthly gravity field solutions derived from GPS orbits of Swarm”. In: *AGU Fall Meeting*. San Francisco, CA, USA: 14-18 Dec.

CONFERENCE ACTIVITY

Oral presentations

- 2022 **Encarnacao, J.**, Arnold, D., Bezdek, A., Dahle, C., Guo, J., IJssel, J., Klokocnik, J., Jaeggi, A., Meyer, U., Krauss, S., Mayer-Guerr, T., Sebera, J., Shum, C., Visser, P., Zhang, Y., “Eight years of temporal gravity changes observed by the Swarm satellites”. In: *EGU General Assembly*. Vienna, Austria.
- 2022 **Encarnacao, J.**, Arnold, D., Bezdek, A., Dahle, C., Guo, J., IJssel, J., Jaggi, A., Klokocnik, J., Krauss, S., Mayer-Gurr, T., Meyer, U., Sebera, J., Shum, C., Visser, P., Zhang, Y., “Multi-approach gravity field models from Swarm GPS data”. In: *12th Swarm Data Quality Workshop*.
- 2021 **Encarnação, J.**, Siemes, C., “Requirements and user needs in the context of quantum gravimetric satellite missions”. In: *COM-ESA Workshop on User Requirements for Space (Quantum) Gravimetry*. Noordwijk, The Netherlands.

- 2021 **Teixeira da Encarnação, J.**, Arnold, D., Bezdek, A., Dahle, C., Guo, J., IJssel, J., Jaeggi, A., Klokocnik, J., Krauss, S., Mayer-Guerr, T., Meyer, U., Sebera, J., Shum, C., Visser, P., Yu Zhang, "Multi-approach gravity field models from Swarm GPS data". In: *11th Swarm Data Quality Workshop*. Athens.
- 2021 **Teixeira da Encarnação, J.**, Arnold, D., Bezdek, A., Dahle, C., Guo, J., IJssel, J., Jaeggi, A., Klokocnik, J., Krauss, S., Mayer-Guerr, T., Meyer, U., Sebera, J., Shum, C., Visser, P., Zhang, Y., "Seven years of monthly low-degree gravity field models from Swarm GPS data". In: *EGU General Assembly*. Vienna, Austria: EGU21-7422, p. 2629.
- 2020 **Encarnação, J.**, Arnold, D., Bezdek, A., Dahle, C., Doornbos, E., Guo, J., IJssel, J., Jaeggi, A., Klokocnik, J., Krauss, S., Mao, X., Mayer-Guerr, T., Meyer, U., Sebera, J., Shum, C., Visser, P., Zhang, C., Zhang, Y., "Multi-approach gravity field models from Swarm GPS data". In: *10th Swarm DQW*. Delft, Netherlands.
- 2019 **Encarnação, J. T.**, Visser, P., Arnold, D., Bezděk, A., Doornbos, E., Guo, J., IJssel, J., Iorfida, E., Jäggi, A., Klokočník, J., Krauss, S., Mao, X., Mayer-Gürr, T., Meyer, U., Sebera, J., Shum, C., Zhang, C., Zhang, Y., "Multi-approach gravity field models from Swarm GPS data". In: *9th Swarm Data Quality Workshop*. 2. Prague, Czech Republic, pp. 16–20. DOI: [10.13140/RG.2.2.34189.90084](https://doi.org/10.13140/RG.2.2.34189.90084).
- 2019 Visser, P., **Teixeira da Encarnação, J.**, Doornbos, E., IJssel, J., Mao, X., Iorfida, E., Arnold, D., Jäggi, A., Meyer, U., Bezděk, A., Sebera, J., Klokočník, J., Ellmer, M., Mayer-Gürr, T., Krauss, S., Guo, J., Zhang, C., Shum, C., Zhang, Y., "Complete 5-years time series of combined monthly gravity field models derived from Swarm GPS data". In: *EGU General Assembly*. Vol. 21. EGU2019-13412. Vienna, Austria: 7-12 Apr., p. 13412. DOI: [10.13140/RG.2.2.11449.01123](https://doi.org/10.13140/RG.2.2.11449.01123).
- 2018 **Encarnação, J.**, Visser, P., Doornbos, E., IJssel, J., Mao, X., Iorfida, E., Arnold, D., Jäggi, A., Meyer, U., Bezdek, A., Sebera, J., Klokocnik, J., Ellmer, M., Mayer-Gürr, T., Zehentner, N., Guo, J., Luk, P., Shum, C. K., Zhang, Y. Y., "Signal contents of combined monthly gravity field models derived from Swarm GPS data Multi-approach gravity field models from Swarm GPS data". In: *EGU General Assembly*. Vienna, Austria: 8-13 Apr. DOI: [10.13140/RG.2.2.24263.39845](https://doi.org/10.13140/RG.2.2.24263.39845).
- 2018 Jäggi, A., Meyer, U., Schreiter, L., Sterken, V., Dahle, C., Arnold, D., **Encarnação, J.**, Visser, P., IJssel, J., Mao, X., Iorfida, E., Bezdek, A., Sebera, J., Mayer-Gürr, T., Zehentner, N., Shum, C. K., Lück, C., Rietbroek, R., Kusche, J., "Assessment of individual and combined gravity field solutions from Swarm GPS data and mitigation of systematic errors". In: *EGU General Assembly*. EGU2018-8944. Vienna, Austria: 8-13 Apr.
- 2018 Visser, P., **Encarnação, J. T.**, Doornbos, E., IJssel, J., Mao, X., Iorfida, E., Arnold, D., Jäggi, A., Meyer, U., Bezděk, A., Sebera, J., Klokočník, J., Ellmer, M., Mayer-Gürr, T., Zehentner, N., Guo, J., Zhang, Y., Shum, C. K., "Multi-approach Gravity Field Models from Swarm GPS data". In: *42nd COSPAR Scientific Assembly*. July. Pasadena, CA, USA: 14-22 Jul., pp. 14–22.
- 2017 **Teixeira da Encarnação, J.**, Arnold, D., Bezdek, A., Dahle, C., Jäggi, A., Mayer-gürr, T., Sebera, J., Shum, C., Visser, P., Zehentner, N., "Swarm as an Observing Platform for Large Surface Mass Transport Processes". In: *4th Swarm Science Meeting*. Banff, Canada: 20-24 Mar.

- 2015 **Teixeira da 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., "First monthly gravity field solutions derived from GPS orbits of Swarm". In: *AGU Fall Meeting*. San Francisco, CA, USA: 14-18 Dec.
- 2015 **Teixeira da Encarnação, J.**, Ijssel, J., Doornbos, E., Visser, P. N., "Frequency domain combination of POD-driven and measured accelerations". In: *5th Swarm Data Quality Workshop*. Paris, France: 7 - 10 Sep.
- 2014 **Teixeira da Encarnação, J.**, Ijssel, J., Doornbos, E., Visser, P., "POD-assisted calibration of Swarms Accelerometer Data". In: *4th Swarm Data Quality Workshop*. Postdam, Germany: 2-5 Dec.
- 2014 **Teixeira da Encarnação, J.**, Doornbos, E., Ijssel, J., Visser, P. N., "Combination of Swarm's Uncalibrated Accelerometer Data with POD-Based Accelerometry". In: *3rd Swarm Science Meeting*. Copenhagen, Denmark: 19-20 Jun.
- 2014 **Teixeira da Encarnação, J.**, Ijssel, J., Doornbos, E., Visser, P. N., "Preliminary analysis of accelerometer data". In: *2nd Swarm Data Quality Workshop*. Rome, Italy: 26-27 Mar.
- 2008 **Encarnação, J.**, Ditmar, P., Liu, X., "Analysis of Satellite Formations in the Context of Gravity Field Retrieval". In: *3rd International Symposium on Formation Flying, Missions and Technologies (SP-654)*. Ed. by K Fletcher. ESA SP-654. Rijswijk, the Netherlands: 23-25 Apr.
- 2002 **Encarnação, J.**, "Single Stage To Orbit Minimum Requirements Through Numerical Simulation". In: *34th COSPAR Scientific Assembly, The Second World Space Congress*. Houston, TX, USA: 10-19 Oct.

Poster presentations

- 2023 **Encarnação, J.**, Arnold, D., Bezdě́k, A., Dahle, C., Guo, J., Ijssel, J. V. D., Jäggi, A., Klokočník, J., Krauss, S., Mayer-gürr, T., Meyer, U., Sebera, J., Shum, C. K., Visser, P., Zhang, Y., "Temporal gravity changes over nine years as observed by the Swarm satellites". In: *EGU General Assembly*. Vienna, Austria.
- 2023 **Encarnação, J.**, Arnold, D., Bezdě́k, A., Dahle, C., Guo, J., Ijssel, J. V. D., Jäggi, A., Krauss, S., Mayer-gürr, T., Meyer, U., Sebera, J., Shum, C. K., Visser, P., "Temporal gravity changes over nine years as observed by the Swarm satellites". In: *IUGG General Assembly*. Berlin, Germany.
- 2022 **Teixeira da Encarnação, J.**, Arnold, D., Bezdek, A., Dahle, C., Guo, J., Ijssel, J. V. D., Jäggi, A., Klokočník, J., Krauss, S., Mayer-Gürr, T., Sebera, J., Shum, C., Visser, P., Zhang, Y., "Earth's Mass Transport Processes Observed by the Swarm Satellites during the GRACE / GRACE-FO Gap". In: *ESA Living Planet Symposium*. Bonn.
- 2021 **Encarnação, J.**, Câmara, F., Dias, R., "uPGRADe - Miniaturized Prototype for Gravity field Assessment using Distributed Earth-orbiting assets". In: *Annual Conference UT Austin Portugal*. Porto.

- 2021 **Teixeira da Encarnacao, J.**, Arnold, D., Bezdek, A., Dahle, C., Guo, J., IJssel, J., Jaeggi, A., Klokocnik, J., Krauss, S., Mayer-Guerr, T., Meyer, U., Sebera, J., Shum, C., Visser, P., Yu Zhang, "Monthly low-degree gravity field models from Swarm GPS data for the last 7 years". In: *Scientific Assembly of the International Association of Geodesy*. Beijing: IAG 2021 – 167.
- 2019 **Teixeira da Encarnação, J.**, Visser, P., Arnold, D., Bezdek, A., Doornbos, E., Ellmer, M., Guo, J., Ijssel, J. V. D., Iorfida, E., Jäggi, A., Klokočník, J., Mao, X., Mayer-Gürr, T., Meyer, U., Sebera, J., Shum, C., Zehentner, N., Zhang, Y., Zhang, C., "Earth's Mass Transport Processes Observed by the Swarm Satellites during the GRACE / GRACE-FO Gap". In: *ESA Living Planet Symposium*. Milano, Italy. DOI: [10.13140/RG.2.2.34631.55207](https://doi.org/10.13140/RG.2.2.34631.55207).
- 2018 **Teixeira da Encarnação, J.**, Arnold, D., Bezdek, A., Doornbos, E., Ellmer, M., Guo, J., IJssel, J., Iorfida, E., Jäggi, A., Klokočník, J., Mao, X., Mayer-Gürr, T., Meyer, U., Sebera, J., Shum, C. K., Visser, P., Zehentner, N., Zhang, Y., Zhang, C., "Observing Earth's mass transport processes with the Swarm satellites". In: *Gravity, Geoid and Height Systems 2018 (GGHS-2018) Symposium*. Copenhagen, Denmark: 17-21 Sep.
- 2018 **Teixeira da Encarnação, J.**, Save, H., Tapley, B., Rim, H. J., "GRACE's accelerometer scale-factor calibration". In: *GRACE/ GRACE-FO Science Team Meeting*. Potsdam, Germany: 9-11 Oct.
- 2018 **Teixeira da Encarnação, J.**, Save, H., Tapley, B. D., Rim, H. J., "Analysis of GRACE's accelerometer scale-factor calibration". In: *AGU Fall Meeting*. G13C-0528. Washington, D.C.: 10-14 Dec.
- 2018 Zehentner, N., Mayer-Gürr, T., Ellmer, M., **Teixeira da Encarnacao, J.**, Visser, P., Doornbos, E., IJssel, J. V., Mao, X., Iorfida, E., Arnold, D., Jäggi, A., Meyer, U., Bezdek, A., Sebera, J., Klokocnik, J., Guo, J., Shum, C., "Investigations of GNSS-derived baselines for gravity field recovery". In: *EGU General Assembly*. EGU2018-11920. Vienna, Austria: 8-13 Apr. DOI: [10.13140/RG.2.2.18307.81440](https://doi.org/10.13140/RG.2.2.18307.81440).
- 2018 Zhang, Y., Shum, C. K., Bezděk, A., Shang, K., Zhang, C., Guo, J., **Teixeira da Encarnação, J.**, Visser, P., "Temporal Gravity Field Recovery Using The Swarm Mission Constellation High-Low GPS Tracking Data And Energy Balance Approach". In: *AGU Fall Meeting*. G13C-0550. Washington D.C.: 10-14 Dec.
- 2017 **Encarnação, J.**, Save, H., Siemes, C., Doornbos, E., Tapley, B., "Temperature corrected-calibration of GRACE's accelerometer". In: *AGU Fall Meeting*. G31B-0904. New Orleans, USA: American Geophysical Union. DOI: [10.13140/RG.2.2.20396.97929](https://doi.org/10.13140/RG.2.2.20396.97929).
- 2017 **Teixeira da 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., "Gravity field models derived from Swarm GPS data". In: *EGU General Assembly*. EGU2017-9218. Vienna, Austria: 23-28 Apr.
- 2016 Doornbos, E., **Teixeira da Encarnação, J.**, IJss, J., Siemes, C., Grunwaldt, L., Peresty, R., Kraus, J., Flury, J., Apelbaum, G., Olsen, P. E. H., "Thermospheric neutral densities derived from Swarm accelerometer and GPS data". In: *ESA Living Planet Symposium*. Prague, Czech Republic: 9-13 May.

- 2016 Jäggi, A., Meyer, U., Jean, Y., Susnik, A., Dach, R., Weigelt, M., Dam, T., Li, Z., Chen, Q., Flechtner, F., Gruber, C., Poropat, L., Güntner, A., Gouweleeuw, B., Mayer-Gürr, T., Kvas, A., Klinger, B., Martinis, S., Zwenzner, H., Bruinsma, S., Lemoine, J.-M., Biancale, R., Flury, J., Bandikova, T., Bourgogne, S., Steffen, H., **Teixeira da Encarnação, J.**, Horwath, M., "European Gravity Service for Improved Emergency Management - Status and Project Highlights". In: *International Symposium on Gravity, Geoid and Height Systems*. Thessaloniki, Greece: 19-23 Sep.
- 2016 Siemes, C., Grunwaldt, L., Peresty, R., Kraus, J., Doornbos, E., **Teixeira da Encarnação, J.**, IJssel, J., Flury, J., Apelbaum, G., Olsen, P. E. H., "Improvements of the Swarm Accelerometer Data Processing". In: *ESA Living Planet Symposium*. Prague, Czech Republic: 9-13 May.
- 2016 Sneew, N, Iran Pour, S, Reubelt, T, Daras, I, Murböck, M, Pail, R, Gruber, T, Visser, P, **Teixeira da Encarnação, J.**, IJssel, J, Others, "ESA SC4MGV Study - Assessment of Satellite Constellations for Monitoring the Variations in Earth Gravity Field". In: *ESA Living Planet Symposium*. Prague, Czech Republic: 9-13 May.
- 2016 **Teixeira da Encarnação, J.**, Arnold, D., Bezdek, A., Dahle, C., Jäggi, A., Mayer-gürr, T., Sebera, J., Visser, P., Zehentner, N., "Gravity field models derived from Swarm GPS data". In: *EGU General Assembly*. EGU2016-59. Vienna, Austria: 17-22 Apr. DOI: [10.13140/RG.2.1.3909.4642](https://doi.org/10.13140/RG.2.1.3909.4642).
- 2015 Astafyeva, E, Zakharenkova, I, Foerster, M, Doornbos, E, **Teixeira da Encarnação, J.**, Siemes, C, "Ionospheric and Thermospheric Response to the 2015 St. Patrick's Day Storm - a Global Multi-Instrumental Overview". In: *AGU Fall Meeting*. San Francisco, CA, USA: 12-16 Dec.
- 2015 Doornbos, E., Siemes, C., **Teixeira da Encarnação, J.**, Peresty, R., Grunwaldt, L., Kraus, J., Holmdahl Olsen, P. E., IJssel, J, Flury, J., Apelbaum, G., "Processing of Swarm Accelerometer Data into Thermospheric Neutral Densities". In: *AGU Fall Meeting*. Abstract SA31D-2371. San Francisco, CA, USA: 14-18 Dec.
- 2015 **Encarnação, J.**, Ditmar, P., Klees, R., "Impact of Orbit Position Errors on Future Satellite Gravity Models". In: *AGU Fall Meeting*. 14-18 Dec.
- 2014 Bruinsma, S, Doornbos, E, Siemes, C, Peresty, R, Kraus, J, Bezdek, A, IJssel, J, **Teixeira da Encarnação, J.**, Visser, P. N., "Results from the First Year of Swarm GPS Receiver and Accelerometer Data". In: *AGU Fall Meeting*. San Francisco, CA, USA: 15-19 Dec.
- 2014 Iran Pour, S, Weigelt, M, Murböck, M, Tonetti, S, Visser, P, Daras, I, **Encarnação, J.**, Cesare, S, Siemes, C, IJssel, J, Others, "Search strategies for optimal double pair scenarios for future gravity satellite missions - experience from the ESA SC4MGV project". In: *5th International GOCE User Workshop*. Paris, France: 25-28 Nov.
- 2013 Doornbos, E, Bruinsma, S, Fritsche, B, Visser, P, Van Den IJssel, J, **Teixeira da Encarnação, J.**, Kern, M, "Air density and wind retrieval using GOCE data". In: *ESA Living Planet Symposium*. Edinburgh, United Kingdom: 9-13 Sep.

- 2013 Olsen, N., Alken, P., Beggan, C., Chulliat, A., Doornbos, E., **Encarnação, J.**, Floberghagen, R., Friis-Christensen, E. A., Hamilton, B., Hulot, G., IJssel, J. V. D., Kuvshinov, A. V., Lesur, V., Luhr, H., Macmillan, S., Maus, S., Olsen, P. E. H., Park, J., Plank, G., Pütke, C., Ritter, P., Rother, M., Sabaka, T. J., Stolle, C., Thebault, E., Thomson, A. W. P., Tøffner-Clausen, L., Velimsky, J., Visser, P. N., "SCARF - the swarm satellite constellation application and research facility". In: *ESA Living Planet Symposium*. Edinburgh, United Kingdom: 9-13 Sep.
- 2012 Doornbos, E., Bruinsma, S., Koppenwallner, G., Fritsche, B., IJssel, J., Visser, P., **Teixeira da Encarnação, J.**, Kern, M., "Thermospheric density and wind from GOCE thruster activation and accelerometer data". In: *EGU General Assembly*. Vienna, Austria: 22-27 Apr.
- 2012 Gunter, B. C., **Teixeira da Encarnação, J.**, Ditmar, P., Klees, R., "Potential contributions to space geodesy from the IridiumNEXT constellation". In: *AGU Fall Meeting*. San Francisco, CA, USA: 3-7 Dec.
- 2011 Gunter, B., **Teixeira da Encarnação, J.**, Ditmar, P., Klees, R., "An investigation into new advances in geodesy utilizing future satellite constellations". In: *AGU Fall Meeting*. SA24A-03. San Francisco, CA, USA: 5-9 Dec.
- 2010 Ditmar, P., Hashemi Farahani, H., **Teixeira da Encarnação, J.**, "Mitigation of along-track artifacts in unconstrained mass transport models based on GRACE satellite data". In: *EGU General Assembly*. Vienna, Austria: 2-7 May.
- 2010 Gunter, B., **Teixeira da Encarnação, J.**, Ditmar, P., Klees, R., "Using existing satellite constellations to complement current and future dedicated gravity field missions". In: *AGU Fall Meeting*. G41A-0788. San Francisco, CA, USA: 13-17 Dec.
- 2010 Hashemi Farahani, H., Ditmar, P., **Teixeira da Encarnação, J.**, Liu, X., "Contribution of an accurate determination of GRACE satellite orbits to precise mass transport modeling". In: *EGU General Assembly*. Vienna, Austria: 2-7 May.
- 2008 **Teixeira da Encarnação, J.**, Ditmar, P. G., Klees, R., "Spectral analysis of positioning modelling errors in gravimetric data". In: *IAG Symposium on Gravity, Geoid, and Earth Observation*. Chania, Greece: 23-27 Jun.
- 2007 **Teixeira da Encarnação, J.**, Ditmar, P. G., Klees, R., "Temporal aliasing in GRACE monthly solutions". In: *Intergeo*. Leipzig, Germany: 25-27 Sep.
- 2007 **Teixeira da Encarnação, J.**, Ditmar, P. G., Klees, R., "Influence of hydrology-related temporal aliasing on the quality of monthly models derived from GRACE satellite gravimetric data". In: *VMSG Symposium*. Utrecht, The Netherlands: 7-8 Nov.

TEACHING EXPERIENCE

- 2022 – 2023 Practical Astrodynamics, 3 ECTS, MSc [TU Delft](#)
- 2022 – 2023 Flight and Orbital Mechanics, 4 ECTS, BSc, [TU Delft](#)
- 2013 – 2016 Tutor for the Test, Analysis & Simulation project, [TU Delft](#)
- 2007 – 2011 Tutor for the Design Synthesis Exercise, [TU Delft](#)

RESEARCH SUPERVISION

2022	MSc thesis Supervisor, TU Delft <i>Gravity gradient navigation</i>
2021	MSc thesis Supervisor, TU Delft <i>Laser propulsion for deployment and maintenance of CubeSat constellations</i> <i>Spatial extrapolation of Swarm gravity field solutions with Machine learning</i>
2020 – 2022	Postdoctoral advisor, CSR <i>uPGRADE – Miniaturized Prototype for GRavity field Assessment using Distributed Earth-orbiting assets</i>
2019	MSc thesis Co-supervisor, CSR <i>Bridging the GRACE gap – Validation of satellite gravity observations via glacial isostatic adjustment, visiting student from TU Delft</i>
2016	Bachelor of Engineering final project co-supervisor, TU Delft <i>Orbit Determination Of Leo Satellites Using Doppler-shift, external student from the Aeronautical Engineering at Inholland University of Applied Sciences</i>

RESEARCH PROJECTS

2022 – 2023	Quantum Space Gravimetry for monitoring Earth's Mass Transport processes
2021 – 2023	NGGM/MAGIC Science Support Study During Phase-A
2021 – 2023	NGGM Phase-A System Study
2020 – 2023	uPGRADE - Miniaturized Prototype for GRavity field Assessment using Distributed Earth-orbiting assets (Funding opportunity: AAC 04/SI/2019 , project nr: 45927)
2019 – present	Multi-approach gravity field models from Swarm GPS data, transfer to operation of production of EGF_SHA_2_ products (DISC contract SW-CO-DTU-GS-111, part of ESA contract 4000109587/13/I-NB)
2017 – 2019	Multi-approach gravity field models from Swarm GPS data (DISC contract SW-CN-DTU-GS-027, part of ESA contract 4000109587/13/I-NB)
2016 – 2019	Gravity Recovery And Climate Experiment (GRACE) Two-year Mission Extension (NASA contract NNL14AA00C)
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)

SERVICE TO PROFESSION

Reviewer for scientific papers submitted to *Advances in Space Research*, *Annales Geophysicae*, *Journal of Geodesy*, *Communications in Nonlinear Science and Numerical Simulation*, *IEEE Geoscience and Remote Sensing Letters*, *International Association of Geodesy Symposia*, *Journal of Geophysical Research: Solid Earth*, *Remote Sensing*, *Sensors and Solid Earth*, cf. [Publons](#)

EXTRA TRAINING

2017	Dealing with Difficult People, Jeff Stellmach, UTexas
2017	Conflict Management Foundations, Kimberly Sullivan, UTexas
2017	Leading without formal authority, Emil Kresl, UTexas
2017	Meeting effectiveness, Emil Kresl, UTexas
2015	Scientific Writing, Sören Johnson, TU Delft
1993	Certificate of Proficiency in English
1993	Radio Amateur, call sign CT3IU, class B

LANGUAGES

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

PROFESSIONAL MEMBERSHIPS

since 2012	American Geophysical Union
since 2016	European Geosciences Union