Hugo Carreno-Luengo

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Education:

1. **Universitat Politècnica de Catalunya (UPC) - BarcelonaTech**

PhD Aerospace Science and Technology 2016
Thesis (*Cum Laude*): "Contributions to GNSS-R Earth Remote Sensing from Nano-Satellites"

2. **Universitat Politècnica de Catalunya (UPC) - BarcelonaTech**

MSc Aerospace Science and Technology 2011

3. **Universidad Politécnica de Madrid (UPM) || Escuela Técnica Superior de Ingenieros Aeronáuticos (ETSIA)**

Ingeniero Aeronáutico, *Plan de Estudios Antiguo* (*"BSc + MSc"*), Intensificación Vehículos Espaciales 2010

Professional Experience:

1. **University of Michigan (UMich) Assistant Research Scientist || NASA Science Mission Directorate**

2019-Present

NASA CYGNSS Project Science Team
CSRB, UMich Campus, Ann Arbor, MI, USA
Prof. Christopher S. Ruf Lab. (PI NASA CYGNSS)

2. **Juan de la Cierva (JdC) Postdoc Fellow on NASA CYGNSS Science Team** 2017-2019

CTTC, UPC Campus, Barcelona, Spain
Ministerio Ciencia e Innovación JdC Fellowship

3. **NASA Jet Propulsion Laboratory (JPL) Postdoc Fellow** 2016-2017

JPL - CalTech, Pasadena, CA, USA
Ionospheric and Atmospheric Remote Sensing Group

4. **Institut d'Estudies Espacials de Catalunya (IEEC) PhD Fellow** 2011-2016

RSE Lab., UPC Campus, Barcelona, Spain
Prof. Adriano Camps Group

Honors and Awards:

1. University of Michigan (UMich) OVPR Research Faculty Awards, Research Faculty Recognition Award, 04/2024.

2. Chair NASA CYGNSS Workshop at AGU Chapman Conference on Remote Sensing of the Water Cycle: Sensors to Science to Society, 02/2024.

3. IEEE SA Standards Board Chair Award, 09/2021.

4. Session Chair IEEE Specialist Meeting on Reflectometry using GNSS and other Signals of Opportunity, 09/2021.

5. Session Chair "Town Hall Meeting: The IEEE GRSS Standard for Spaceborne GNSS-R" at IEEE GRSS Specialist Meeting on Reflectometry using GNSS and Other Signals of Opportunity (GNSS+R 2021), 09/2021.

6. Session Chair at IEEE IGARSS 2021: Recent Advances in GNSS-R II, 07/2021.

7. IEEE Senior Member, 06/2020.

8. Session Chair at NASA CYGNSS Science Meeting, 06/2020.

9. Session Chair at IEEE IGARSS 2019: Global Navigation Satellite Systems Reflectometry / GNSS-R Sensors, Techniques and Applications I, 07/2019.

10. MDPI Remote Sensing Postdoctoral Award, 03/2019.

11. Cover page of the IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing (JSTARS), Special Issue Cyclone Global Navigation Satellite System (CYGNSS) Early on Orbit Performance, 01/2019.

12. Serra Hunter Programme Tenure-Eligible Lecturer (declined), Barcelona, Spain, 11/2018.

13. Universitat Politecnica de Catalunya (UPC) - BarcelonaTech Award for the Best PhD Thesis in Science, 10/2018.

14. Session Chair at IEEE IGARSS 2018: Global Navigation Satellite Systems Reflectometry / GNSS-R III: Sensors and Applications, 07/2018.

15. Session Chair at IEEE IGARSS 2018: Global Navigation Satellite Systems Reflectometry / GNSS-R IV: Sensors and Applications, 07/2018.

16. Chinese Academy of Science (CAS) President's International Fellowship Initiative (PIFI) (declined), 12/2017.

17. NASA CYGNSS Science Team Member, 12/2017.

18. IEEE GRSS Award for the best PhD Thesis in Geoscience and Remote Sensing, 09/2017.

19. Session Chair at IEEE IGARSS 2017: Global Navigation Satellite Systems Reflectometry / GNSS-R Sensors II, 07/2017.

20. Session Chair at IEEE IGARSS 2017: Global Navigation Satellite Systems Reflectometry / GNSS-R Sensors III, 07/2017.

21. 1st position Juan de la Cierva (JdC) Postdoctoral Research Program by Spanish Ministry of Science and Innovation, 06/2017.

22. Invitation by CGWIC to assist ^{3}Cat-2 CubeSat Launch Campaign at Jiuquan Satellite Launch Center (Gobi Desert), 08/2016.

23. Session Chair at IEEE IGARSS 2015: Global Navigation Satellite Systems Reflectometry / GNSS-R Sensors II, 07/2015.

24. IEEE Student Travel Grant for IEEE IGARSS, Milan, Italy, 07/2015.

25. IEEE Student Travel Grant for IEEE GRSS Specialist Meeting on Reflectometry using GNSS and Other Signals of Opportunity (GNSS+R 2015), GFZ, Potsdam, Germany, 05/2015.

26. Cover page of the IEEE Tutorial on Remote Sensing Using GNSS Bistatic Radar of Opportunity, 12/2014.

27. Cover page of the IEEE Geoscience and Remote Sensing Magazine, 12/2014.

28. NASA Student Travel Grant for IEEE GRSS Specialist Meeting on Reflectometry using GNSS and Other Signals of Opportunity (GNSS+R 2012), Purdue University, IN, USA, 10/2012.

29. PhD Fellowship by Institute of Space Studies of Catalonia (IEEC), 01/2011.

Specialization Courses:

1. Machine Learning in Remote Sensing - Theory and Applications for Earth Observation, IEEE IGARSS Tutorial, September 2020.

2. Spacecraft Systems Engineering. European Space Agency (ESA) - European Space Research and Technology Centre (ESTEC). January 2014-October 2014.

3. Assembly, Integration, and Verification (AIV). Innovative Solutions in Space (ISISPACE). Delft, The Netherlands. March 2014.

4. Systems Engineering for Small Satellites. ISISPACE. Professor R.J. Hamann (Delft University of Technology). Delft, The Netherlands. January 2014.

5. Attitude Determination and Control System. (ADCS). Innovative Solutions in Space (ISISPACE). Dr. Congying Han. Delft, The Netherlands. January 2014.

6. Spacecraft Thermal Analysis. European Space Agency (ESA) - European Space Research and Technology Centre (ESTEC). January 2013-October 2013.

Accreditations:

1. Tenure-track lecturer by the Catalan University Quality Assurance Agency (AQU), 2016.

2. Assistant professor doctor by the Spanish National Agency for Quality Assessment and Accreditation (ANECA), 2016.

Satellite/Balloon Launch Campaign Experience:

1. Launch Campaign of the satellite ^{3}Cat-2: Representative of the UPC during the launch campaign of the 6U cubesat ^{3}Cat-2 on-board a Long March II D rocket at Jiuquan Satellite Launch Center (JSLC). Invitation letter from China Great Wall Industry Corporation (CGWIC). Establishment of future space-related cooperation activities with the president of CGWIC, Mr. Yin Liming. 10 days. July 2016.

2. Launch Campaign European Space Agency ESA BEXUS 19: 10 days at Esrange Space Center as a team leader during the launch campaign of a stratospheric balloon. Tracking and control of the space-borne instrument from the ground station at Esrange Space Center. Real-time optimization of the instrument's parameters. 03/10/2014-13/10/2014.

3. Visiting Stage: 1 week at Swedish Space Corporation (SSC). Collaboration with ESA Academy. Evaluation students' skills, training course aerospace engineering for students. 02/03/2014-07/03/2014.

4. Visiting Stage: 1 month ESA-ESTEC. Team leader, management, coordination students' activities, system requirements definition, system integration, direct communications with the selected teams' representatives. 2014.

5. Launch Campaign of the ESA BEXUS 17: 10 days at Esrange Space Center as a team leader during the launch campaign of a stratospheric balloon. Tracking and control of the space-borne instrument from the ground station at Esrange Space Center. Real-time optimization of instrument's parameters. 4/10/2013-14/10/2014.

6. Visiting Stage: 1 week at German Aerospace Center (DLR) - Institute of Space Operations and Astronaut Training. Collaboration with ESA Academy. Evaluation students' skills, training course aerospace engineering for students. 03/02/2013-08/02/2013.

Scientific Biography:

Hugo Carreno-Luengo (IEEE S'12-M'14-SM' 20) received the degree of Ingeniero Aeronáutico (*Plan de Estudios Antiguo "BSc + MSc"*), specialization in Spacecrafts, from the Escuela Técnica Superior de Ingenieros Aeronáuticos (ETSIA), the Universidad Politécnica de Madrid (UPM), Madrid, Spain, in 2010, and the PhD degree (Cum Laude) from the Department of Signal Theory and Communications (TSC), the Universitat Politècnica de Catalunya (UPC), Barcelona, Spain, in 2016.

From 2009 to 2010, he performed the final degree project at the Department of Aircrafts and Space Vehicles at UPM. In 2011, he performed the Master of Space Science and Technology at UPC, and he was the recipient of a PhD fellowship by the Institut d'Estudis Espacials de Catalunya (IEEC), where he was involved in the design and development of the first-ever nano-satellite for Earth remote sensing using GNSS-R (2011-2016). From 2012 to 2015, he was the Principal Investigator (PI) of the TORMES and TORMES 2.0 projects within ESA REXUS/BEXUS and a co-PI in the E-GEM FP7 project. From 2013 to 2014, he was a visiting researcher with ESA-ESTEC, DLR, Esrange Space Center, and in Summer 2016, he was invited by the China Great Wall Industry Corporation (CGWIC) to assist the launch campaign of the ^{3}Cat-2 CubeSat at Jiuquan Satellite Launch Center. From 2016 to 2017, he was a postdoc fellow at NASA Jet Propulsion Laboratory, Pasadena, CA, USA, working in a GNSS-Reflectometry experiment using the radar aboard NASA SMAP mission. The experiment was successful and that set the basis for the development of a new SMAP operational mode. Later, he was a JdC postdoc fellow on NASA CYGNSS Science Team (2017-2019). Since 2019, he is a University-of-Michigan (UMich) College-of-Engineering research scientist working directly with the PI of NASA CYGNSS mission, under a contract with the NASA Science Mission Directorate. His research interests include the use of GNSS-Reflectometry techniques for Earth Remote Sensing over land surfaces from Small-Satellites. He has developed the updated CYGNSS end-to-end simulator, the new calibrated CYGNSS raw IF product, a new CYGNSS freeze/thaw (F/T) retrieval algorithm, and a new CYGNSS inland surface water detection algorithm under dense biomass.

He has participated in 12 international research projects (NASA, ESA, FP7, etc), being PI in 4 and co-PI in 1 of them, managing an estimated budget of 2 M€. Presently, he is with the NASA CYGNSS Project Science Team, overseeing a total budget of ~ 200 M$. Additionally, he is contributing as an external collaborator to a NASA ROSES project. He has participated in 3 national research projects (MINECO, etc) with a total budget of 1.5 M€, being PI of 2 of them. Additionally, he has participated in technology transfer activities at CTTC, within the Sesar project (European Union), and at the University of Michigan with SRI International, and the National Space Organization (Remote Sensing Special Issue).

Dr. Carreno-Luengo was a Session Chair at the 2015, 2017, 2018, 2019 and 2021 IEEE International Geoscience and Remote Sensing Symposium (IGARSS), 2021 IEEE GNSS+R and 2020 NASA CYGNSS Science Team Meeting. Additionally, he was the Chair of the Town Hall meeting at IEEE GNSS+R 2021 and Chair of CYGNSS Workshop at the 2024 AGU Chapman Conference on Remote Sensing of the Water Cycle. He is member of IEEE GRSS, he is serving as the Chair of the IEEE GRSS Working Group P4003 (Standard for Global Navigation Satellite System-Reflectometry Data and Metadata Content) and as the vice-Chair of the IEEE GRSS Standards for Earth Observation Technical Committee. He was the recipient of 2 IEEE and 1 NASA student travel grants from 2012 to 2015, an IEEE GRSS Award for the best PhD thesis in Geoscience and Remote Sensing, the Serra Hunter Programme, and the CAS's President's International Fellowship Initiative (PIFI) in 2017, the UPC Special Award in Science in 2018, the MDPI Remote Sensing Postdoctoral Award in 2019, and the IEEE SA Standards Board Chair Award in 2021. He has advised 13 undergraduate and 5 master students. He has managed several students teams within ESA REXUS/BEXUS (ESA Academy). The management of a BEXUS project is a substantial effort. The team leader must have an in-depth understanding of the science and technology behind his experiment mission, and must coordinate, motivate, and lecture his students team. He is Associate Editor of IEEE Transactions on Geoscience and Remote Sensing. He is member of the Editorial and Reviewer Boards of MDPI Remote Sensing. He was Guest Editor of various MDPI Remote Sensing Special Issues including "GNSS-R Earth Remote Sensing from SmallSats." He was member of the Editorial Board at MDPI Earth from 2020-2022. He has generated 144 reviews in high impact factor journals such as IEEE TGRS, IEEE JSTARS, IEEE GRSL, MDPI Remote Sensing and Sensors, Elsevier Advances in Space research, and AGU Radio Science. He served on the panel review for the NASA's ROSES programme in 2020 and 2023. He served as external reviewer (panelist) for the European Commission and other public R&D centers from EU Members (2020). He has reviewed the book "Climate Change and Extreme Events", Elsevier.

He has numerous WoS indexed publications: 55 (44 first + corresponding author). Total publications in WoS 91 (~ 80% first + corresponding author). 72 WoS publications with international co-authors. WoS publications without PhD advisor: a) Total: 53, b) Indexed: 27. He has numerous Q1 publications (Elsevier RSE, IEEE TGRS, IEEE JSTARS, IEEE IGARSS, MDPI Remote Sensing,…): 19 JCR Q1 (16 first + corresponding author) & 3 JCR Q2 (2 first + corresponding author) / 22 SCI Q1 (19 first + corresponding author). Additionally, 1 IEEE Standard (first author) + 1 Book + 1 IET Book Chapter (single author) + 18 technical notes (first author) + 3 IEEE Cover pages (GRSM, JSTARS, Tutorial GNSS+R) + 1 NASA CYGNSS Algorithm Theoretical Basis Document (ATBD).

He has numerous conference proceedings (IEEE, AGU, NASA, ESA,…): 68 (51 first author). He has provided 66 talks to international research societies, including 16 invited presentations (IGARSS, ESA ARSI+KEO, etc). Some of his results have been included in the cover page of the IEEE GRSS Magazine (December 2014), the IEEE Tutorial on GNSS+R (December 2014), and the IEEE JSTARS Special Issue Cyclone Global Navigation Satellite System (CYGNSS) Early on Orbit Performance (January 2019). Additionally, he has the qualification of "Assistant Professor" by the Spanish National Agency for Quality Assessment and Accreditation and of "Tenure Track Lecturer" by the Catalan University Quality Assurance Agency. He is IEEE Senior Member from 2020, he held a total of 48 honours and awards, and he has actively participated in numerous outreach activities (national and international).

Books:

1. **H. Carreno-Luengo,** and C.L. Lin, "GNSS-R Earth Remote Sensing from SmallSats," Remote Sensing, ***ISBN 978-3-0365-9461-32023***, 2023.

Book Chapters:

1. **H. Carreno-Luengo,** "GNSS-R Ocean Altimetry," Ocean Remote Sensing Technologies: High Frequency, Marine and GNSS-Based Radar, IET - Institution of Engineering and Technology, ***ISBN-13: 978-1-83953-161-3***, 2021.

Standards:

1. **H. Carreno-Luengo**, A. Camps, N. Floury, M. Martin-Neira, C. Ruf, T. Wang, S. J. Khalsa, M. P. Clarizia, J. Reynolds, J. Johnson, A. O'Brien, C. Galdi, M. di Bisceglie, A. Dielacher, P. Jales, M. Unwin, L. King, G. Foti, R. Shah, D. Pascual, B. Schreiner, M. Asgarimehr, J. Wickert, S. Ribo, and E. Cardellach, "IEEE Standard for Spaceborne Global Navigation Satellite System-Reflectometry (GNSS-R) Data and Metadata Content," IEEE Standards Association, ***doi: 10.1109/IEEESTD.2021.9594781***, 2021.

Journal Papers:

1. **H. Carreno-Luengo**, C.S. Ruf, S. Gleason, and A. Russel, "Detection of Inland Water Bodies under Dense Biomass by CYGNSS," Elsevier Remote Sensing of the Environment, vol. 301, ***doi.org/10.1016/j.rse.2023.113896***, 2023. Q1

2. **H. Carreno-Luengo**, C.S. Ruf, S. Gleason, and A. Russel, "A New Multi-Resolution CYGNSS Data Product for Fully and Partially Coherent Scattering," IEEE TGRS, vol. 61, 4408118, ***doi: 10.1109/TGRS.2023.3318639***, 2023. Q1

3. **H. Carreno-Luengo**, and C. Ruf, "Mapping Freezing and Thawing Surface State Periods with the CYGNSS Based F/T Seasonal Threshold Algorithm," IEEE JSTARS, vol. 15, pp. 9943-9952, ***doi: 10.1109/JSTARS.2022.3216463***, 2022. Q1

4. **H. Carreno-Luengo**, and C. Ruf, "Retrieving Freeze/Thaw Surface State from CYGNSS Measurements," IEEE TGRS, vol. 60, 4302313, ***doi: 10.1109/TGRS.2021.3120932***, 2021. Q1

5. N. Pierdicca, D. Comite, A. Camps, **H. Carreno-Luengo**, L. Cenci, M. P. Clarizia, F. Costantini, L. Dente, L. Guerriero, A. Mollfulleda, S. Paloscia, H. Park, E. Santi, M. Zribi, and N. Floury, "The Potential of Spaceborne GNSS Reflectometry for Soil Moisture, Biomass, and Freeze–Thaw Monitoring: Summary of a European Space Agency-Funded Study," IEEE Geoscience and Remote Sensing Magazine, ***doi:10.1109/MGRS.2021.3115448***, vol. 10, no.2, pp. 8-38, 2021 Q1

6. **H. Carreno-Luengo**, A. Camps, N. Floury, M. Martin-Neira, C. Ruf, T. Wang, S. J. Khalsa, M. P. Clarizia, J. Reynolds, J. Johnson, A. O'Brien, C. Galdi, M. di Bisceglie, A. Dielacher, P. Jales, M. Unwin, L. King, G. Foti, R. Shah, D. Pascual, B. Schreiner, M. Asgarimehr, J. Wickert, S. Ribo, and E. Cardellach, "The IEEE-SA Working Group on Spaceborne GNSS-R: Scene Study," IEEE Access, vol. 9, pp. 89906-89933, ***doi: 10.1109/ACCESS.2021.3089762,*** 2021. Q1

7. **H. Carreno-Luengo**, J.A. Crespo, R. Akbar, A. Bringer, A. Warnock, M. Morris, and C. Ruf, "The CYGNSS Mission: On-Going Science Team Investigations," MDPI Remote Sensing Special Issue on GNSS-R Earth Remote Sensing from SmallSats, vol. 13, no. 9, pp. 1814, ***doi.org/10.3390/rs13091814***, 2021. Q1

8. **H. Carreno-Luengo**, G. Luzi, and M. Crosetto, "Above-Ground Biomass Retrieval over Tropical Forests: a Novel GNSS-R Approach with CYGNSS," MDPI Remote Sensing Special Issue on Advanced RF Sensors and Remote Sensing Instruments, vol. 12, no. 9, pp. 1368, ***doi.org/10.3390/rs12091368***, 2020. Q1

9. **H. Carreno-Luengo**, G. Luzi, and M. Crosetto, "First Evaluation of Topography on GNSS-R: an Empirical Study Based on a Digital Elevation Model," MDPI Remote Sensing Special Issue on Applications of GNSS Reflectometry for Earth Observation, vol. 11, no. 21, pp. 2556, ***doi.org/10.3390/rs11212556***, 2019. Q2

10. **H. Carreno-Luengo**, G. Luzi, and M. Crosetto, "Sensitivity of CYGNSS Bistatic Reflectivity and SMAP Microwave Radiometry Brightness Temperature to Geophysical Parameters over Land Surfaces," IEEE JSTARS Special Issue Cyclone Global Navigation Satellite System (CYGNSS) Early On Orbit Performance, vol. 12, no. 1, pp. 107-122, ***doi: 10.1109/JSTARS.2018.2856588***, 2019. Q1

11. **H. Carreno-Luengo**, G. Luzi, and M. Crosetto, "Impact of the Elevation Angle on CYGNSS GNSS-Bistatic Reflectivity," MDPI Remote Sensing Special Issue on Applications of Micro- and Nano-Satellites for Earth Observation, vol. 10, no. 11. pp. 1-21, ***doi.org/10.3390/rs10111749***, 2018. Q1

12. **H. Carreno-Luengo**, S.T. Lowe, C. Zuffada, S. Esterhuizen, and S. Oveisgharan, "Spaceborne GNSS-R from the SMAP Mission: First Assessment of Polarimetric Scatterometry over Land and Cryosphere," MDPI Remote Sensing, vol. 9, no. 4, pp. 362, ***doi: 10.3390/rs9040362***, 2017. Q2

13. A. Cortiella, D. Vidal, J. Jané, E. Juan, R. Olivé, A. Amèzaga, J. F. Munoz, P, Via, **H. Carreno-Luengo**, and A. Camps, "^{3}Cat-2: Attitude Determination and Control System for a GNSS-R Earth Observation 6U CubeSat Mission," European Journal of Remote Sensing, vol. 49, pp. 759-776, ***doi: 10.5721/EuJRS20164940***, 2017. Q4

14. **H. Carreno-Luengo**, A. Camps, P. Vila. J.F. Munoz, A. Cortiella, D. Vidal, J. Jané, N. Catarino, M. Hagenfeldt, P. Palomo, and S. Cornara, "^{3}Cat-2; an Experimental Nano-Satellite for GNSS-R Earth Observation: Mission Concept and Analysis," IEEE JSTARS, vol. 9, no. 10, pp. 4540-4551, ***doi: 10.1109/JSTARS.2016.2574717***, 2016. Q1

15. R. Olivé, A. Amèzaga, **H. Carreno-Luengo**, H. Park, and A. Camps, "Implementation of a GNSS-R Payload Based on Software-Defined Radio for the ^{3}Cat-2 Mission," IEEE JSTARS, vol. 9, no. 10, pp. 4824-4833, ***doi: 10.1109/JSTARS.2016.2559939***, 2016. Q1

16. **H. Carreno-Luengo**, A. Camps, J. Querol, and G. Forte, "First Results of a GNSS-R Experiment from a Stratospheric Balloon over Boreal Forests," IEEE TGRS, vol. 54, no. 5, pp. 2652-2663, ***doi: 10.1109/TGRS.2015.2504242***, 2016. Q1

17. **H. Carreno-Luengo**, and A, Camps, "First Dual-Band Multi-Constellation GNSS-R Scatterometry Experiment over Boreal Forests from a Stratospheric Balloon," IEEE JSTARS, vol. 9, no. 10, pp. 4743-4751, ***doi: 10.1109/JSTARS.2015.2496661***, 2016. Q1

18. **H. Carreno-Luengo**, A. Amèzaga, D. Vidal, R. Olivé, J.F. Munoz, and A. Camps, "First Polarimetric GNSS-R Measurements from a Stratospheric Flight over Boreal Forests," MDPI Remote Sensing, vol. 7, no. 10, pp. 13120-13138, ***doi:10.3390/rs71013120***, 2015. Q1

19. **H. Carreno-Luengo**, and A. Camps, "Empirical Results of a Surface Level GNSS-R Experiment in a Wave Channel," MDPI Remote Sensing, vol. 7. no. 6, pp. 7471-7493, ***doi:10.3390/rs70607471***, 2015. Q1

20. H. Park, D. Pascual, A. Camps, F. Martín, A. Alonso-Arroyo, and **H. Carreno-Luengo**, "Analysis of Spaceborne GNSS-R Delay-Doppler Tracking," IEEE JSTARS, vol. 7, no. 5, pp. 1481-1492, ***doi: 10.1109/JSTARS.2014.2322198***, 2014. Q1

21. **H. Carreno-Luengo**, A. Camps, I. Ramos-Pérez, and A. Rius, "Experimental Evaluation of GNSS-Reflectometry Altimetric Precision Using the P(Y) and C/A Signals," IEEE JSTARS, vol. 7, no. 5, pp. 1493-1500, ***doi: 10.1109/JSTARS.2014.2320298***, 2014. Q1

22. **H. Carreno-Luengo**, H. Park, A. Camps, F. Fabra, and A. Rius, "GNSS-R Derived Centimetric Sea Topography: an Airborne Experiment Demonstration," IEEE JSTARS, vol. 6, no. 3, pp. 1468-1478, ***doi: 10.1109/JSTARS.2013.2257990***, 2013. Q1

23. H. Park, A. Camps, E. Valencia, N. Rodríguez-Alvarez, X. Bosch, I. Ramos-Pérez, and **H. Carreno-Luengo**, "Retracking Considerations in Spaceborne GNSS-R Altimetry", GPS Solutions, vol. 16, no. 4, pp. 507-518, ***doi: 10.1007/s10291-011-0251-7***, 2012. Q2

Conference Papers:

1. **H. Carreno-Luengo**, C. Ruf, S. Gleason, and A. Russel, "Resolving Multi-Year Trends in Inland Surface Water Extent with a Hybrid Constellation of GNSS-R SmallSats," in Proc. of the 2023 AGU Fall Meeting, San Francisco, CA, USA, December 2023.

2. C**.** Ruf, R. Balasubramaniam, **H. Carreno-Luengo**, C. Chew, and A. Warnock, A "New GNSS-R Measurement Capabilities and their Applications using CYGNSS," in Proc. of the 2023 AGU Fall Meeting, San Francisco, CA, USA, December 2023.

3. **H. Carreno-Luengo**, C.S. Ruf, S. Gleason, I. M. Russo, M. di Bisceglie, and C. Galdi, "In-Orbit Real Time Inland Water Detection by a Future Spaceborne GNSS-R Receiver," in Proc. of the 2023 IEEE IGARSS, Pasadena, USA, July 2023.

4. **H. Carreno-Luengo**, C.S. Ruf, S. Gleason, and A. Russel, "An Improved Inland Water Detector Using Standard L1 Data: Application to CYGNSS," in Proc. of the 2023 IEEE IGARSS, Pasadena, USA, July 2023.

5. C.S. Ruf, R. Balasubramaniam, **H. Carreno-Luengo**, and D. McKague, "The NASA CYGNSS Mission," in Proc. of the 2023 IEEE IGARSS, Pasadena, USA, July 2023.

6. **H. Carreno-Luengo**, C.S. Ruf, S. Gleason, I. M. Russo, M. di Bisceglie, and C. Galdi, "In-Space Earth's Inland Water Monitoring by a Future GNSS-R Receiver," in Proc. of the 2023 IEEE GRSS Specialist Meeting on Reflectometry using GNSS and other Signals of Opportunity, Boulder, USA, May 2023.

7. **H. Carreno-Luengo**, C.S. Ruf, S. Gleason, and A. Russel, "Inland Water Bodies Tracking with Power DDMs: a Combination of Detectors," in Proc. of the 2023 IEEE GRSS Specialist Meeting on Reflectometry using GNSS and other Signals of Opportunity, Boulder, USA, May 2023.

8. **H. Carreno-Luengo**, C. Ruf, S. Gleason, and A. Russel, "The New CYGNSS Calibrated Raw IF Product: Description and Applications," NASA CYGNSS Science Team Meeting, Pasadena, CA, USA, March 2023.

9. **H. Carreno-Luengo,** and C. Ruf, "Mapping Freezing and Thawing Surface State Periods with the CYGNSS Based F/T Seasonal Threshold Algorithm," in Proc. of the 2022 AGU Fall Meeting, Chicago, USA, December 2022.

10. A. Warnock, C. S. Ruf, **H. Carreno-Luengo**, O. Paulus, W. Plucknett, M. Rinaldi, A. Knoll, and K. Brunner, "River Width and Streamflow Monitoring with CYGNSS Remote Sensing Data," in Proc. of the 2022 AGU Fall Meeting, Chicago, USA, December 2022.

11. C. Ruf, **H. Carreno-Luengo**, C. Chew, M. Moghaddam, D. Posselt, J. Crespo, Z. Pu, and A. Warnock, "The NASA Cyclone Global Navigation Satellite System SmallSat Constellation", in Proc. of the 2022 Small Satellite Conference, Logan, Utah, August 2022.

12. **H. Carreno-Luengo**, and C. Ruf, "Triggering Freeze/Thaw Surface State Monitoring from High Inclination Orbit GNSS-R Missions: a CYGNSS-Based Study," in Proc. of the 2022 IEEE IGARSS, pp.7632-7635, ***doi: 10.1109/IGARSS46834.2022.9883093,*** Kuala Lumpur, Malaysia, July 2022.

13. **H. Carreno-Luengo**, A. Warnock, and C. Ruf, "The CYGNSS Coherent End-to-End Simulator: Development and Results," in Proc. of the 2022 IEEE IGARSS, pp.7441-7444, ***doi: 10.1109/IGARSS46834.2022.9884499***, Kuala Lumpur, Malaysia, July 2022.

14. **H. Carreno-Luengo**, C. Ruf, A. Russel, and S. Gleason, "Standard, Full, and Super-Full Calibrated CYGNSS DDMs with High Spatial Resolution: Introduction to the New Product," NASA CYGNSS Science Team Meeting, Pasadena, CA, USA, March 2022.

15. A. Warnock, M. Al-khaldi, **H. Carreno-Luengo**, A. Russel, and S. Gleason, "Riverine Monitoring with CYGNSS Data," NASA CYGNSS Science Team Meeting, Pasadena, CA, USA, March 2022.

16. **H. Carreno-Luengo**, and C. Ruf, "GNSS-R Experience from CYGNSS Including Freeze/Thaw Detection," ESA Scout HydroGNSS Workshop, February 2022.

17. **H. Carreno-Luengo,** and C. Ruf, "Freeze-Thaw Retrieval with the Cyclone Global Navigation Satellite System (CYGNSS)," in Proc. of the 2021 AGU Fall Meeting, New Orleans, USA, December 2021.

18. C. Ruf, **H. Carreno-Luengo**, C. Chew, C. Gerlein-Safdi, and A. Warnock, "The NASA Cyclone Global Navigation Satellite System: A Constellation of MicroSats," in Proc. of the 2021 URSI GASS, Rome, Italy, August 2021.

19. **H. Carreno-Luengo**, and C. Ruf, "Freeze/Thaw Retrieval Over High Altitude Areas with CYGNSS," in Proc. of the 2021 IEEE IGARSS, pp.7807-7810, ***doi:10.1109/IGARSS47720.2021.9553238***, Brussels, Belgium, July 2021.

20. **H. Carreno-Luengo**, C. Ruf, S. Gleason, A. Russel, and T. Butler, "Generation of a New High Resolution DDM Data Product from CYGNSS Raw IF Measurements," in Proc. of the 2021 IEEE IGARSS, pp.7815-7818, ***doi: 10.1109/IGARSS47720.2021.9554828***, Brussels, Belgium, July 2021.

21. **H. Carreno-Luengo,** and C. Ruf, "Freeze-Thaw Detection and Monitoring with the CYclone Global Navigation Satellite System (CYGNSS)," in Proc. of the 2020 AGU Fall Meeting, San Francisco, CA, USA, December 2020.

22. C. Ruf, **H. Carreno-Luengo**, C. Chew, M. Moghaddam, and A. Warnock, "Remote Sensing of the Terrestrial Water Cycle with the Cyclone Global Navigation Satellite System (CYGNSS)," in Proc. of the 2020 AGU Fall Meeting, Earth and Space Science Open Archive *https://www.essoar.org/doi/10.1002/essoar.10504786.1*, San Francisco, CA, USA, December 2020.

23. **H. Carreno-Luengo,** C. Ruf, A. Warnock, and K. Brunner, "Investigating the Impact of Coherent and Incoherent Scattering Terms in GNSS-R Delay Doppler Maps," in Proc. of the 2020 IEEE IGARSS, pp. 6202-6205, ***doi: 10.1109/IGARSS39084.2020.9324404***, Hawaii, USA, July 2020.

24. **H. Carreno-Luengo**, A. Camps, N. Floury, M. Martin-Neira, C. Ruf, T. Wang, S.J. Khalsa, M.P. Clarizia, J. Reynolds, J. Johnson, A. O'Brien, C. Galdi, M. di Bisceglie, A. Dielacher, P. Jales, M. Unwin, L. King, G. Foti, R.

Shah, D. Pascual, B. Schreiner, M. Asgarimehr, J. Wickert, S. Ribo, and E. Cardellach, "The GRSS Standard for GNSS-Reflectometry," in Proc. of the 2020 IEEE IGARSS, pp.6289-6292, ***doi: 10.1109/IGARSS39084.2020.9323222***, Hawaii, USA, July 2020.

25. **H. Carreno-Luengo,** C. Ruf, A. Warnock, and K. Brunner, "Modeling the Coherent Scattering Term over Inland Water Bodies: an Update of the CyGNSS E2ES," NASA CYGNSS Science Team Meeting, Ann Arbor, MI, USA, June 2020.

26. **H. Carreno-Luengo,** G. Luzi, and M. Crosetto, "On the Use of GNSS-R for Biomass Studies over Tropical Forests," in Proc. of the 2019 Advanced RF Sensors and Remote Sensing Instrument Workshop, European Space Agency ESA/ESTEC, The Netherlands, November 2019.

27. S.J. Khalsa, C. Durell, **H. Carreno-Luengo**, L. Pierce, and D. Houtz, "Developing Standards for Earth Observation Data Products," in Proc. of the 11th Symposium on Digital Earth, Florence, Italy, September 2019.

28. **H. Carreno-Luengo**, G. Luzi, and M. Crosetto, "Biomass Estimation over Tropical Rainforests Using GNSS-R on-board the CYGNSS Microsatellites Constellation," in Proc. of the 2019 IEEE IGARSS, pp. 8676-8679, ***doi: 10.1109/IGARSS.2019.8900213***, Yokohama, Japan, July 2019.

29. **H. Carreno-Luengo**, G. Luzi, and M. Crosetto, "Effects of Rough Topography in GNSS-R: a Parametric Study based on a Digital Elevation Model," in Proc. of the 2019 IEEE IGARSS, pp. 8663-8666, ***doi: 10.1109/IGARSS.2019.8898381***, Yokohama, Japan, July 2019.

30. N. Pierdicca, A. Camps, **H. Carreno-Luengo**, L. Cenci, M.P. Clarizia, D. Comite, F. Costantini, L. Dente, N. Floury, L. Guerriero, A. Mollfulleda, S. Paloscia, H. Park, E. Santi, and M. Zribi, "Potential of Spaceborne GNSS-R for Land Applications," in Proc. of the European Space Agency (ESA) Living Planet Symposium 2019, Milan, Italy, May 2019.

31. **H. Carreno-Luengo**, G. Luzi, and M. Crosetto, "Sensitivity of CYGNSS to Above Ground Biomass and Canopy Height over Tropical Forests," in Proc. of the 2019 IEEE GRSS Specialist Meeting on Reflectometry using GNSS and other Signals of Opportunity, Benevento, Italy, May 2019.

32. **H. Carreno-Luengo**, G. Luzi, and M. Crosetto, "An Experimental Assessment of Rough Topography on Spaceborne Delay Doppler Maps," in Proc. of the 2019 IEEE GRSS Specialist Meeting on Reflectometry using GNSS and other Signals of Opportunity, Benevento, Italy, May 2019.

33. **H. Carreno-Luengo**, "Global Navigation Satellite Systems Reflectometry (GNSS-R): a New Tool for Earth Remote Sensing with Improved Spatio-Temporal Resolution," in Proc. of the 1st CTTC Workshop, Barcelona, Spain, September 2018.

34. **H. Carreno-Luengo**, G. Luzi, and M. Crosetto, "Geophysical Relationship between CYGNSS GNSS-R Bistatic Reflectivity and SMAP Microwave Radiometry Brightness over Land Surfaces," in Proc. of the 2018 IEEE IGARSS, pp, 2031-2034, ***doi: 10.1109/IGARSS.2018.8519565***, Valencia, Spain, July 2018.

35. **H. Carreno-Luengo**, G. Luzi, and M. Crosetto, "Impact of the Elevation Angle on CyGNSS Reflectivity over Different Scattering Media over Land and Ocean," in Proc. of the 2018 IEEE IGARSSS, pp. 1051-1054, ***doi: 10.1109/IGARSS.2018.8519402***, Valencia, Spain, July 2018.

36. **H. Carreno-Luengo**, G. Luzi, and M. Crosetto, "NASA CYGNSS-Reflectometer and SMAP-Radiometer Functional Correlation over Land Surfaces," in Proc. of the 2018 IEEE Young Professionals Conference on Remote Sensing, Aachen, Germany, June 2018.

37. D. Macía, **H. Carreno-Luengo**, M. Soria, J.A. Ruiz de Azúa, D. González, and D. García-Almiñana, "Proof-of-Concept of the GNSS DIrect & REflected Combination Tester (G-DIRECT) Payload from a Stratospheric Sounding Balloon Experiment over Land Surfaces," in Proc. of the 2nd European Space Agency (ESA) Symposium on Space Educational Activities, Budapest, Hungary, April 2018.

38. **H. Carreno-Luengo**, S.T. Lowe, C. Zuffada, S. Esterhuizen, and S. Oveisgharan, "Spaceborne GNSS-R from the SMAP Mission: First Assessment of Polarimetric Scatterometry over Land and Cryosphere," in Proc. of the 2017 IEEE IGARSS, pp. 4095-4098, ***doi: 10.1109/IGARSS.2017.8127900***, Fort Worth, TX, USA, July 2017.

39. **H. Carreno-Luengo**, S.T. Lowe, C. Zuffada, S. Esterhuizen, and S. Oveisgharan, "GNSS-R from the SMAP and CYGNSS Missions: Application to Polarimetric Scatterometry and Ocean Altimetry," in Proc. of the 2017 IEEE IGARSS, pp. 5019-5021, ***doi: 10.1109/IGARSS.2017.8128130***, Fort Worth, TX, USA, July 2017.

40. **H. Carreno-Luengo**, S.T. Lowe, C. Zuffada, S. Esterhuizen, and S. Oveisgharan, "Advancing GNSS-R Ocean Scatterometry and Altimetry; SMAP + CYGNSS," in Proc. of the 2017 IEEE GRSS Specialist Meeting on Reflectometry using GNSS and other Signals of Opportunity, Ann Arbor, MI, USA, May 2017.

41. **H. Carreno-Luengo**, S.T. Lowe, C. Zuffada, S. Esterhuizen, and S. Oveisgharan, "Dual-Polarization Spaceborne GNSS-R from the SMAP Mission: a Study over Land and Cryosphere," in Proc. of the 2017 IEEE GRSS Specialist Meeting on Reflectometry using GNSS and other Signals of Opportunity, Ann Arbor, MI, USA, May 2017.

42. **H. Carreno-Luengo**, S.T. Lowe, C. Zuffada, S. Esterhuizen, and S. Oveisgharan, "Spaceborne GNSS-R from the SMAP Mission," in Proc. of the 2017 IEEE National Radio Science Meeting, Boulder, CO, USA, January 2017.

43. **H. Carreno-Luengo**, and A. Camps, "Unified GNSS-R Formulation Including Coherent and Incoherent Scattering Components," in Proc. of the 2016 IEEE IGARSS, pp. 4815-4818, ***doi: 10.1109/IGARSS.2016.7730256***, Beijing, China, July 2016.

44. **H. Carreno-Luengo**, and A. Camps, "Unified GNSS-R Scattering Model: A Stratospheric Flight Experiment Demonstration," in Proc. of the European Space Agency (ESA) Living Planet Symposium 2016, Prague, Czech Republic, May 2016.

45. **H. Carreno-Luengo,** A. Camps, "^{3}Cat-2: Polarimetric GNSS-R Earth Remote Sensing using Multi-Constellation Signals at Dual Frequency", GNSS Excellence Week, Barcelona, Spain, January 2016.

46. **H. Carreno-Luengo**, A. Camps, "^{3}Cat-2: An Experimental 6U Cubesat to Test Innovative GNSS-R Concepts. Part 1: Mission Analysis, Design and Scientific Results from BEXUS 17 and 19 Stratospheric Flights Using the PYCARO Payload," 2015 IEEE Young Professionals Conference on Remote Sensing, Barcelona, Spain, December 2015.

47. **H. Carreno-Luengo**, A. Amèzaga, A. Bolet, D. Vidal, J. Jané, J.F. Munoz, R. Olivé, A. Camps, J. Carola, N. Catarino, M. Hagenfeldt, P. Palomo, and S. Cornara, "TORMES-BEXUS 17 and 19: Precursor of the 6U Cubesat ^{3}Cat-2," in Proc. of the 22nd ESA PAC Symposium, June 2015.

48. **H. Carreno-Luengo**, A. Amèzaga, A. Bolet, D. Vidal, J. Jané, J.F. Munoz, R. Olivé, and A. Camps, "TORMES: A Multi-Constellation GNSS-R Experiment on BEXUS 17 and 19," in Proc. of the 22nd ESA PAC Symposium, June 2015.

49. **H. Carreno-Luengo**, A. Amèzaga, A. Bolet, D. Vidal, J. Jané, J.F. Munoz, R. Olivé, A. Camps, J. Carola, N. Catarino, M. Hagenfeldt, P. Palomo, and S. Cornara, "^{3}Cat-2: A 6U CubeSat-based Multi-Constellation, Dual-Polarization, and Dual-Frequency GNSS-R and GNSS-RO Experimental Mission," in Proc. of the 2015 IEEE IGARSS, pp. 5115-5118, ***doi: 10.1109/IGARSS.2015.7326984***, Milan, Italy, July 2015.

50. **H. Carreno-Luengo**, A. Amèzaga, A. Bolet, D. Vidal, J. Jané, J.F. Munoz, R. Olivé, and A. Camps, "Multi-Constellation, Dual-Polarization, and Dual-Frequency GNSS-R Stratospheric Balloon Experiment Over Boreal Forests," in Proc. of the 2015 IEEE IGARSS, pp. 5107-5110, ***doi: 10.1109/IGARSS.2015.7326982***, Milan, Italy, July 2015.

51. **H. Carreno-Luengo**, and A. Camps, "Results of the PYCARO GNSS-R Instrument on-board the BEXUS 17&19 Stratospheric Balloon Experiments," in Proc. of the 2015 IEEE GRSS Specialist Meeting on Reflectometry using GNSS and other Signals of Opportunity, Potsdam, Germany, May 2015.

52. **H. Carreno-Luengo**, and A. Camps, "^{3}Cat-2: Polarimetric GNSS-R Earth Remote Sensing Using Multi-Constellation Signals at Dual-Frequency," in Proc. of the 2015 IEEE GRSS Specialist Meeting on Reflectometry using GNSS and other Signals of Opportunity, Potsdam, Germany, May 2015.

53. H. Park, A. Camps, D. Pascual, A. Alonso-Arroyo, F. Martín, **H. Carreno-Luengo**, and R. Onrubia, "Simulation Study on Tropical Cyclone Tracking from the ISS Using GNSS-R measurements," in Proc. of the 2014 IEEE IGARSS, pp. 4062-4065, ***doi: 10.1109/IGARSS.2014.6947378***, Quebec, Canada, July 2014.

54. A. Camps, J.F. Marchán-Hernandez, X. Bosch-Lluis, N. Rodríguez-Alvarez, I. Ramos-Pérez, E. Valencia, J. M. Tarongi, H. Park, **H. Carreno-Luengo**, A. Alonso-Arroyo, D. Pascual, R. Onrubia, G. Forte, and J. Querol, "Review of GNSS-R Instruments and Tools Developed at the Universitat Politècnica de Catalunya-BarcelonaTech," in Proc. of the 2014 IEEE IGARSS, pp. 3826-3829, ***doi: 10.1109/IGARSS.2014.6947318***, Quebec, Canada, July 2014.

55. **H. Carreno-Luengo**, A. Camps, J. Querol, G. Forte, R. Onrubia and R. Díez, "A Stratospheric Balloon GNSS-R Experiment: The ^{3}Cat-2 Project in DLR/SNSB BEXUS," in Proc. of the 2014 IEEE IGARSS, pp. 3626-3629, ***doi: 10.1109/IGARSS.2014.6947268***, Quebec, Canada, July 2014.

56. **H. Carreno-Luengo**, A. Camps, R. Jové, A. Alonso-Arroyo, R. Olivé, A. Amèzaga, D. Vidal, and J.F. Munoz, "The ^{3}Cat-2 Project: GNSS-R In-Orbit Demonstrator for Earth Observation," in Proc. of the 2014 ESA Small Satellites, Systems & Service Symposium, Mallorca, Spain, May 2014.

57. R. Jové Casulleras, A. Camps, J. Ramos, E. Alarcon, E. Bou Balust, **H. Carreno-Luengo**, A. Amezaga, R. Olive, J.F. Munoz Martin, C. Araguz, et al. "^{3}Cat-1: a Multi-Payload Cubesat-based Scientific and Technology Demonstrator," in Proc. of the 2014 ESA Small Satellites, Systems & Service Symposium, Mallorca, Spain, May 2014.

58. H. Park, A. Camps, D. Pascual, A. Alonso-Arroyo, F. Martín, and **H. Carreno-Luengo**, "Improvement of the PAU/PARIS End-to-end Performance Simulator (P2EPS) in Preparation for Upcoming GNSS-R Missions," in Proc. of the 2013 IEEE IGARSS, pp. 362-365, ***doi: 10.1109/IGARSS.2013.6721167***, Melbourne, Australia, July 2013.

59. **H. Carreno-Luengo**, and A. Camps, "A GNSS-R Experiment over Wave Channel Surface," in Proc. of the 2013 IEEE IGARSS, pp. 366-369, ***doi: 10.1109/IGARSS.2013.6721168***, Melbourne, Australia, July 2013.

60. **H. Carreno-Luengo**, A. Camps, I. Ramos-Pérez, G. Forte, R. Onrubia and R. Díez, "^{3}Cat-2: A P(Y) and C/A GNSS-R Experimental Nano-Satellite Mission," in Proc. of the 2013 IEEE IGARSS, pp. 843-846, ***doi: 10.1109/IGARSS.2013.6721290***, Melbourne, Australia, July 2013.

61. **H. Carreno-Luengo**, and A. Camps, "^{3}Cat-2: a Novel Approach to Space-borne GNSS-R Ocean Altimetry Using CubeSats," in Proc. of the 2013 URSI Commission F Microwave Signatures Specialist Symposium on Microwave Remote Sensing of the Earth, Oceans, and Atmosphere, Helsinki, Finland, October 2013.

62. H. Park, A. Camps, D. Pascual, **H. Carreno-Luengo**, A. Alonso-Arroyo, F. Martín, and R. Onrubia, "System Performance Simulation of Spaceborne GNSS-R Altimeters," in Proc. of the 2013 URSI Commission F Microwave Signatures Specialist Symposium on Microwave Remote Sensing of the Earth, Oceans, and Atmosphere, Helsinki, Finland, October 2013.

63. **H. Carreno-Luengo**, A. Camps, I. Ramos-Pérez, and A. Rius, "PYCARO's Instrument Proof of Concept," in Proc. of the 2012 IEEE GRSS Specialist Meeting on Reflectometry using GNSS and other Signals of Opportunity, ***doi: 10.1109/GNSSR.2012.6408251***, Purdue University, IN, USA, October 2012.

64. H. Park, A. Camps, E. Valencia, **H. Carreno-Luengo**, F. Martín, A. Alonso-Arroyo, and D. Pascual, "Analysis of GNSS-R Delay and Doppler Tracking Errors," in Proc. of the 2012 IEEE GRSS, Specialist Meeting on Reflectometry using GNSS and other Signals of Opportunity, ***doi: 10.1109/GNSSR.2012.6408259***, Purdue University, IN, USA, October 2012.

65. **H. Carreno-Luengo**, H. Park, A. Camps, F. Fabra, and A. Rius, "Submeter Ocean Altimetry with GPS L1 C/A Signal," in Proc. of the 2012 IEEE IGARSS, pp. 7071-7074, ***doi: 10.1109/IGARSS.2012.6352034***, Munich, Germany, July 2012.

Lectures to Scientific Societies:

1. NASA CYGNSS Workshop (Ticket Required), 2024 AGU Chapman Conference on Remote Sensing of the Water Cycle: Sensors to Science to Society, Honolulu, HI, USA, February 2024. Oral presentation. **Invited lecturer**.

2. Resolving Multi-Year Trends in Inland Surface Water Extent with a Hybrid Constellation of GNSS-R SmallSats, 2023 AGU Fall Meeting, San Francisco, CA, USA, December 2023.

3. In-Orbit Real Time Inland Water Detection by a Future Spaceborne GNSS-R Receiver, 2023 IEEE IGARSS, Pasadena, CA, USA, July 2023. Poster.

4. An Improved Inland Water Detector Using Standard L1 Data: Application to CYGNSS, 2023 IEEE IGARSS, Pasadena, CA, USA, July 2023. Poster.

5. In-Space Earth's Inland Water Monitoring by a Future GNSS-R Receiver, 2023 Workshop on Reflectometry using GNSS and Other Signals of Opportunity (GNSS+R 2023), Boulder, CO, USA, May 2023. Oral presentation.

6. Inland Water Bodies Tracking with Power DDMs: a Combination of Detectors, 2023 Workshop on Reflectometry using GNSS and Other Signals of Opportunity (GNSS+R 2023), Boulder, CO, USA, May 2023. Oral presentation.

7. The New CYGNSS Calibrated Raw IF Product: Description and Applications, NASA CYGNSS Science Team Meeting, Pasadena, CA, USA, March 2023. Oral Presentation.

8. Mapping Freezing and Thawing Surface State Periods with the CYGNSS Based F/T Seasonal Threshold Algorithm, 2022 AGU Fall Meeting, Chicago, USA, December 2022. Poster.

9. Triggering Freeze/Thaw Surface State Monitoring from High Inclination Orbit GNSS-R Missions: a CYGNSS-Based Study, 2022 IEEE IGARSS, Kuala Lumpur, Malaysia, July 2022. Poster.

10. The CYGNSS Coherent End-to-End Simulator: Development and Results, 2022 IEEE IGARSS, Kuala Lumpur, Malaysia, July 2022. Oral Presentation.

11. Standard, Full, and Super-Full Calibrated CYGNSS DDMs with High Spatial Resolution: Introduction to the New Product, NASA CYGNSS Science Team Meeting, Pasadena, CA, USA, March 2022. Oral Presentation.

12. GNSS-R Experience with CYGNSS including Freeze/Thaw Detection, ESA Scout HydroGNSS Virtual Workshop, February 2022**.** Oral presentation. **Invited lecturer.**

13. Freeze-Thaw Retrieval with the Cyclone Global Navigation Satellite System (CYGNSS), 2021 AGU Fall Meeting, New Orleans, USA, December 2021. Oral Presentation.

14. Town Hall Meeting: The IEEE GRSS Standard for Spaceborne GNSS-R, 2021 Workshop on Reflectometry using GNSS and Other Signals of Opportunity (GNSS+R 2021), Beijing, China, September 2021. Oral presentation. **Invited lecturer.**

15. Freeze/Thaw Retrieval Over High Altitude Areas with CYGNSS, 2021 IEEE IGARSS, Brussels, Belgium, July 2021. Oral Presentation.

16. Generation of a New High Resolution DDM Data Product from CYGNSS Raw IF Measurements, 2021 IEEE IGARSS, Brussels, Belgium, July 2021. Oral Presentation.

17. On the Use of CYGNSS for Inland Water Applications, GNSS-R Payload and Research Investigations of Satellite Mission (TSU PRISM) Seminars, Taiwan Space Union, June 2021**.** Oral presentation. **Invited lecturer.**

18. Freeze-Thaw Detection and Monitoring with the CYclone Global Navigation Satellite System (CYGNSS), 2020 AGU Fall Meeting, San Francisco, CA, USA, December 2020.

19. Investigating the Impact of Coherent and Incoherent Scattering Terms in GNSS-R Delay Doppler Maps, 2020 IEEE IGARSS, Hawaii, USA, July 2020. Oral Presentation.

20. The GRSS Standard for GNSS-Reflectometry, 2020 IEEE IGARSS, Hawaii, USA, July 2020. Oral Presentation.

21. Modeling the Coherent Scattering Term over Inland Water Bodies: an Update of the CYGNSS E2ES, NASA CYGNSS Science Team Meeting, Ann Arbor, MI, USA, July 2020. Oral Presentation.

22. On the Use of GNSS-R for Biomass Studies over Tropical Forests, 2019 Advanced RF Sensors and Remote Sensing Instrument Workshop, ESA/ESTEC, November 2019. Oral presentation. **Invited Session** GNSS+R.

23. Biomass Estimation over Tropical Rainforests Using GNSS-R on-board the CYGNSS Microsatellites Constellation, 2019 IEEE IGARSS, Yokohama, Japan, July 2019. Poster.

24. Effects of Rough Topography in GNSS-R: A Parametric Study based on a Digital Elevation Model, 2019 IEEE IGARSS, Yokohama, Japan, July 2019. Poster.

25. Sensitivity of CYGNSS to Above Ground Biomass and Canopy Height over Tropical Forests, 2019 Workshop on Reflectometry using GNSS and Other Signals of Opportunity (GNSS+R 2019), Benevento, Italy, May 2019. Oral presentation.

26. An Experimental Assessment of Rough Topography on Spaceborne Delay Doppler Maps, 2019 Workshop on Reflectometry using GNSS and Other Signals of Opportunity (GNSS+R 2019), Benevento, Italy, May 2019. Poster.

27. Global Navigation Satellite Systems Reflectometry (GNSS-R): a New Tool for Earth Remote Sensing with Improved Spatio-Temporal Resolution, 1st CTTC Workshop, Barcelona, Spain, September 2018. Poster.

28. Geophysical Relationship between CYGNSS GNSS-R Bistatic Reflectivity and SMAP Microwave Radiometry Brightness over Land Surfaces, 2018 IEEE IGARSS, Valencia, Spain, July 2018. Oral presentation.

29. Impact of the Elevation Angle on CYGNSS Reflectivity over Different Scattering Media over Land and Ocean, 2018 IEEE IGARSS, Valencia, Spain, July 2018. Poster.

30. NASA CYGNSS-Reflectometer and SMAP-Radiometer Functional Correlation over Land Surfaces, 2018 IEEE Young Professionals Conference on Remote Sensing, Aachen, Germany, June 2018. Oral presentation.

31. Introduction to GNSS Reflectometry for Earth Remote Sensing, CTTC, December 2017. Oral presentation. **Invited lecturer**.

32. A GNSS-R Experiment on-board SMAP, NASA Jet Propulsion Laboratory (JPL), September 2017. Oral presentation. **Invited lecturer**.

33. Spaceborne GNSS-R from the SMAP Mission: First Assessment of Polarimetric Scatterometry over Land and Cryosphere, 2017 IEEE IGARSS, Fort Worth, USA, July 2017. Oral presentation.

34. GNSS-R from the SMAP and CYGNSS Missions: Application to Polarimetric Scatterometry and Ocean Altimetry, 2017 IEEE IGARSS, Fort Worth, USA, July 2017. Poster.

35. Advancing GNSS-R Ocean Scatterometry and Altimetry; SMAP + CYGNSS, 2015 Workshop on Reflectometry using GNSS and Other Signals of Opportunity (GNSS+R 2017), Ann Arbor, USA, May 2017. Oral presentation.

36. Dual-Polarization Spaceborne GNSS-R from the SMAP Mission: a Study over Land and Cryosphere, 2015 Workshop on Reflectometry using GNSS and Other Signals of Opportunity (GNSS+R 2017), Ann Arbor, USA, May 2015. Oral presentation.

37. Spaceborne GNSS-R from the SMAP Mission: First Assessment of Polarimetric Scatterometry over Land and Cryosphere, National Radio Science Meeting, University of Colorado, Boulder, USA, January 2017. Oral presentation.

38. First Preliminary Results of a GNSS-R Experiment on-board SMAP, Final Workshop E-GEM FP7 project, Lisbon Portugal, November 2016. Oral presentation. **Invited lecturer**.

39. Advancing Our Understanding on Space Technology, Escuela Superior de Ingeniería Industrial, Aeroespacial y Audiovisual de Terrassa (ESEIAAT), UPC, November 2016. Oral presentation. **Invited lecturer**.

40. Contributions to GNSS-R Earth Remote Sensing from Nano-Satellites, NASA Jet Propulsion Laboratory (JPL), October 2016. Oral presentation. **Invited lecturer**.

41. Unified GNSS-R Formulation Including Coherent and Incoherent Scattering Components, 2016 IEEE IGARSS, Beijing, China, July 2016. Poster.

42. Unified GNSS-R Scattering Model: A Stratospheric Flight Experiment Demonstration, 2016 ESA Living Planet Symposium, Prague, Czech Republic, May 2016. Poster.

43. ^{3}Cat-2: Polarimetric GNSS-R Earth Remote Sensing using Multi-Constellation Signals at Dual Frequency, GNSS Excellence Week, Barcelona, Spain, January 2016. Poster.

44. Mission Analysis and Design of the 6U Cubesat ^{3}Cat-2, European GNSS-R Environmental Monitoring (E-GEM) Second Progress Meeting, IEEC, Barcelona, Spain, January 2016. Oral presentation.

45. ^{3}Cat-2: An Experimental 6U Cubesat to Test Innovative GNSS-R Concepts. Part 1: Mission Analysis, Design and Scientific Results from BEXUS 17 and 19 Stratospheric Flights Using the PYCARO Payload, 2015 IEEE Young Professionals Conference on Remote Sensing, December 2015, Barcelona, Spain. Oral presentation.

46. ^{3}Cat-2: A 6U Cubesat-based Multi-Constellation, Dual-Polarization, and Dual-Frequency GNSS-R and GNSS-RO Experimental Mission, 2015 IEEE IGARSS, Milan, Italy, July 2015. Oral presentation. **Invited Session** Spaceborne Missions and Scientific Applications of GNSS-Reflectometry II.

47. Multi-Constellation, Dual-Polarization, and Dual-Frequency GNSS-R Stratospheric Balloon Experiment Over Boreal Forests, 2015 IEEE IGARSS, Milan, Italy, July 2015. Oral presentation. **Invited Session** Innovative Approaches to GNSS+R: Instruments and Techniques II.

48. TOpography from Reflectometric Measurements: an Experiment from Stratosphere (TORMES) - BEXUS 17 and 19: Precursor of the 6U Cubesat ^{3}Cat-2, 22nd ESA PAC Symposium, Tromso, Norway, June 2015. Oral presentation.

49. TOpography from Reflectometric Measurements: an Experiment from Stratosphere (TORMES): A Multi-Constellation GNSS-R Experiment on BEXUS 17 and 19, 22nd ESA PAC Symposium, Tromso, Norway, June 2015. Oral presentation.

50. 3Cat-2: Polarimetric GNSS-R Earth Remote Sensing Using Multi-Constellation Signals at Dual-Frequency, 2015 Workshop on Reflectometry using GNSS and Other Signals of Opportunity (GNSS+R 2015), Potsdam, Germany, May 2015. Poster.

51. Results of the PYCARO GNSS-R Instrument on-board the BEXUS 17&19 Stratospheric Balloon Experiments, 2015 Workshop on Reflectometry using GNSS and Other Signals of Opportunity (GNSS+R 2015), Potsdam, Germany, May 2015. Oral presentation.

52. Launch Campaign Evaluation and First results of the TORMES Team on-board BEXUS 19, Swedish Space Corporation (SSC) - Esrange Space Center, October 2014. Oral presentation.

53. A Stratospheric Balloon GNSS-R Experiment: The 3Cat-2 Project in DLR/SNSB BEXUS, 2014 IEEE IGARSS, Quebec, Canada, July 2014. Oral presentation. **Invited Session** Earth Remote Sensing with Small Satellites: Technology Developments.

54. The 3Cat-2 Project: GNSS-R In-Orbit Demonstrator for Earth Observation, 2014 ESA Small Satellites, Systems & Service Symposium, Mallorca, Spain, May 2014. Oral presentation.

55. Critical Design Review of TORMES 2.0 Team, ESA-ESTEC, Noordwijk, The Netherlands, May 2014. Oral presentation.

56. Preliminary Design Review of TORMES 2.0 Team, Swedish Space Corporation (SSC) - Esrange Space Center, March 2014. Oral presentation.

57. TORMES 2.0, REXUS/BEXUS Selection Workshop, ESA-ESTEC, Noordwijk, The Netherlands, December 2013. Oral presentation.

58. Launch Campaign Evaluation and First Results of the TORMES Team On-Board BEXUS 17, Swedish Space Corporation (SSC) - Esrange Space Center, October 2013. Oral presentation.

59. A Novel Approach to Space-borne GNSS-R Ocean Altimetry Using CubeSats, 2013 URSI Commission F Microwave Signatures Specialist Symposium on Microwave Remote Sensing of the Earth, Oceans, and Atmosphere, Helsinki, Finland, October 2013. Oral presentation.

60. A GNSS-R Experiment over Wave Channel Surface, 2013 IEEE IGARSS, Melbourne, Australia, July 2013. Poster.

61. 3Cat-2: A P(Y) and C/A GNSS-R Experimental Nano-Satellite Mission, 2013 IEEE IGARSS, Melbourne, Australia, July 2013. Oral presentation. **Invited Session** Remote Sensing Instruments and Technologies for Small Satellites I.

62. Critical Design Review of TORMES Team, ESA-ESTEC, Noordwijk, The Netherlands, May 2013. Oral presentation.

63. Preliminary Design Review of TORMES Team, DLR-Institute of Space Operations and Astronaut Training, Oberpfaffenhofen, Germany, February 2013. Oral presentation.

64. TORMES, REXUS/BEXUS Selection ESA-ESTEC, Noordwijk, The Netherlands, December 2012. Oral presentation.

65. PYCARO's Instrument Proof of Concept, 2012 Workshop on Reflectometry using GNSS and Other Signals of Opportunity (GNSS+R 2012), Purdue University, IN, USA, October 2012. Oral presentation.

66. Submeter Ocean Altimetry with GPS L1 C/A Signal, 2012 IEEE IGARSS, Munich, Germany, July 2012. Oral presentation. **Invited Session** Recent Advances in GNSS Reflectometry.

Other Attending Conferences:

1. UMich Diversity, Equity and Inclusion (DEI) Series, "Building Allyship Toward a Gender-Inclusive Campus Community," April 5, 2023.

2. UMich Diversity, Equity and Inclusion (DEI) Series, "Sexual Harassment in the Academy: From Science to Solutions," March 7, 2023.

3. Leveraging Commercial Space for Earth and Ocean Remote Sensing: A Dissemination Workshop 2022, National Academy of Sciences, Washington, DC, USA.

4. Data Science for GNSS Remote Sensing Workshop 2022, GFZ, Potsdam, Germany.

5. ESA Living Planet Symposium 2022, Bonn, Germany.

6. AGU Fall Meeting 2019, San Francisco, CA, USA. "Celebrate the Past, Inspire the Future," AGU's Centennial.

7. NASA CYGNSS Science Meeting 2019, California Institute of Technology, Pasadena, CA, USA.

8. Barcelona Space Up 2018, The Space Unconference, Barcelona, Spain.

Participation in Relevant Projects:

1. Commercial Smallsat Data Acquisition (CSDA) Program (2022-Present) -Financing Entity: NASA. Principal Investigator: Hugo Carreno-Luengo (UMich).

2. Remote Sensing of River Flow Rate (2021-2024) -Financing Entity: NASA ROSES. -Amount: ~ 500 k$.

3. Extended NASA CYGNSS Mission (2021-Present) -Financing Entity: NASA -Amount: ~ 50 M$. Working directly with the Principal Investigator: Christopher S. Ruf.

4. NASA CYGNSS Mission (2019-2021) -Financing Entity: NASA -Amount: ~ 150 M$. Working directly with the Principal Investigator: Christopher S. Ruf.

5. Air New Zealand Joins NASA Climate Science Mission (2019-Present). -Financing Entity: NASA -Amount: ~ 1.5 M$. Working directly with the Principal Investigator: Christopher S. Ruf.

6. NASA Land-Cover and Land-Use Change (LCLUC) (2018-Present) -Financing Entity: NASA.

7. Mesoscale Ocean Altimetry Using GNSS-Reflectometry (2017-2019) NASA CYGNSS Extended Sciences Investigations. Principal Investigator: Hugo Carreno-Luengo (CTTC).

8. Potential of Spaceborne GNSS-R for Land Applications (2016-2020) -Financing Entity: ESA ITT -Amount: ~ 200 k€.

9. Assessing the Ability of CYGNSS to Provide Sea Surface Topography for Mesoscale Process Studies (2016-2017) -Financing Entity: NASA ROSES -Amount: ~ 500 k$.

10. TORMES 2.0-ESA REXUS/BEXUS 18/19 (2013-2014) -Financing Entity: ESA, DLR, SNSB, SSC, ZARM -Amount: ~ 600 k€ (estimated cost stratospheric balloon flight) Principal Investigator: Hugo Carreno-Luengo (UPC).

11. E-GEM European GNSS-R Environmental Monitoring FP7 Project -Financing Entity: European Commission -Amount: ~ 2.9 M€. Co-Principal Investigator at UPC subproject (~ 850 k€): Hugo Carreno Luengo (UPC).

12. TORMES-ESA REXUS/BEXUS 16/17 (2012-2013) -Financing Entity: ESA, DLR, SNSB, SSC, ZARM -Amount: ~ 600 k€ (estimated cost stratospheric balloon flight) Principal Investigator: Hugo Carreno-Luengo (UPC).

13. Aplicaciones Avanzadas en Radio Ocultaciones y Dispersometría Utilizando Señales GNSS y Otras Señales de Oportunidad (2011-2015) -Financing Entity: Spanish Ministerio de Economía y Competitividad (MINECO) -Amount: ~ 1.5 M€.

R&D non-Competitive Contracts, Agreements or Projects with Public or Private Entities

1. Airborne Experimental Campaign to Test an Innovative Spaceborne Instrument (PYCARO Reflectometer). Institut Cartogràphic i Geologic de Catalunya (ICGC), Universitat Politècnica de Catalunya (UPC). Principal Investigator: Hugo Carreno-Luengo.

2. Airborne Experimental Campaign as a Proof-Of-Concept of a CubeSat Mission. Barcelona Aeronautics and Space Association (BAIE), Barcelona-Aeroclub Sabadell, Universitat Politècnica de Catalunya (UPC). Principal Investigator: Hugo Carreno-Luengo.

Technology Transfer Activities

1. Participation in the NASA Commercial Smallsat Data Acquisition Program. NASA-funded researchers.

2. I am leading a collaboration agreement between the University of Michigan and two companies, Spire and National Space Organization (MDPI Remote Sensing Special Issue).

3. I am leading a collaboration agreement between the University of Michigan and the SRI International to develop a simulator so as to be able to study flood inundation events using GNSS-R. University of Michigan and the SRI International.

4. Research and Development (R&D) on the use of GNSS-R to provide response in the range of precompetitive research and engineering demonstration models. Centre Tecnològic de Telecomunicacions de Catalunya (CTTC). CTTC focuses on the combination of research and technology development to provide response in the range of precompetitive research and engineering demonstration models.

5. Research and Development (R&D) on multi-code and multi-frequency Global Navigation Satellite Systems (GNSS) in the Single European Sky ATM Research (SESAR) project (http://www.sesarju.eu/). Indra Espacio, S.A.

Languages: Spanish (native), English (fluent), Catalan (fluent), French (basic).

Service:

1. co-Chair, UMich Climate and Space Sciences and Engineering "Seminar Series" (749 seminar), 06/2023-04/2024.

2. co-Chair IEEE GRSS Standards for Earth Observation Technical Committee, IEEE Geoscience and Remote Sensing Society (GRSS), 2023-Present.

3. Associate Editor IEEE Transactions on Geoscience and Remote Sensing, IEEE Geoscience and Remote Sensing Society (GRSS), 2023-Present.

4. Expert Panel Reviewer, National Aeronautics Space Administration (NASA) ROSES, ~ 3 M$ per year/ 5 years, 2023-2023.

5. Guest Editor Special Issue "Modeling, Processing and Analysis of Microwave Remote Sensing Data", MDPI Remote Sensing, 2022-Present.

6. Expert External Reviewer, IEEE International Geoscience and Remote Sensing Symposium (IGARSS), 2021-Present.

7. Guest Editor Special Issue "GNSS-R Earth Remote Sensing from SmallSats", MDPI Remote Sensing, 2020-Present.

8. Member, American Geophysical Union (AGU), 2020-Present.

9. Associate Editor, MDPI Earth, 2020-2022.

10. Expert External Reviewer, European Commission and other public R&D centers from EU Members, ~ 500 k€, 2020-2020.

11. Expert Panel Reviewer, National Aeronautics Space Administration (NASA) ROSES, ~ 3 M$ per year/ 5 years, 2020-2020.

12. Reviewer Book "Climate Change and Extreme Events," Elsevier Inc: New York, NY, US, Elsevier, 2020-2020.

13. Editorial Board, MDPI Remote Sensing, 2019-Present.

14. Reviewer Board, MDPI Remote Sensing, 2019-Present.

15. Chair Working Group P4003 - Standard for Global Navigation Satellite System-Reflectometry (GNSS-R), IEEE Standards Association Geoscience and Remote Sensing Society (GRSS), 2019-Present.

16. Member, IEEE GRSS Technical Committee on Standards for Earth Observation, 2019-Present.

17. Guest Editor Special Issue "Advanced RF Sensors and Remote Sensing Instruments", MDPI Remote Sensing, 2019-2020.

18. Member, Geoscience and Remote Sensing Society (GRSS), 2017-Present.

19. Expert external reviewer, IEEE, Elsevier, AGU, MDPI, [IEEE (Journal of Selected Topics in Applied Earth Observations and Remote Sensing (JSTARS), Transactions of Geoscience and Remote Sensing (TGRS), Geoscience and Remote Sensing Letters (GRSL)), Elsevier (Advances in Space Research), AGU (Radio Science), and MDPI (Remote Sensing and Sensors)], 2012-Present.

20. Collaboration with organizing committee during the symposium, IEEE International Geoscience and Remote Sensing Symposium (IGARSS), 2012-2012.

21. Member, Institute of Electrical and Electronics Engineers (IEEE), 2011-Present.

(co-) Advising Students:

1. Ollie Paulus, AWMeX project within NASA CYGNSS mission. Including experimental field campaign Pascagoula River (July 2022). Drone imagery. 2021-2023. University of Michigan (UMich).

2. William Plucknett, AWMeX project within NASA CYGNSS mission. Including experimental field campaign Pascagoula River (July 2022). Drone imagery. 2021-2023. University of Michigan (UMich).

3. Michael Rinaldi, AWMeX project within NASA CYGNSS mission. Including experimental field campaign Pascagoula River (July 2022). Drone imagery. 2021-2023. University of Michigan (UMich).

4. Daniel Macía Fernández. BSc Final Project: "Earth Remote Sensing from a Stratospheric Sounding Balloon," 6/2/2018. Universitat Politècnica de Catalunya.

5. Silvia Gonzalez García. BSc Final Project: "Study of Thermal Control of a Stratospheric Sounding Balloon Capsule," 10/6/2017. Universitat Politècnica de Catalunya.

6. Alex Cortiella. Research Assistant: Attitude Determination and Control System (ADCS) for UPC-^{3}Cat-2 mission, 23/6/2016. Universitat Politècnica de Catalunya.

7. Enric Juan Martínez. BSc Final Project: "Attitude Determination Control System Software for Nano-Satellites," 26/10/2015. Universitat Politècnica de Catalunya.

8. Roger Olivé. MSc Thesis: "Implementation of a GNSS-R Payload based on Software-Defined Radio for the ^{3}Cat-2 Mission," 18/2/2015. Universitat Politècnica de Catalunya.

9. Juan Francisco Munoz. BSc Final Project: "Design and Implementation of the Communications System of Nanosatellites," 16/2/2015. Universitat Politècnica de Catalunya.

10. Albert Bolet. BSc Final Project: "Reaction Wheel-based 3-Axes Attitude Control Systems for Nano-Satellites," 2/2/2015. Universitat Politècnica de Catalunya.

11. David Vidal. Research Assistant: Attitude Determination and Control System (ADCS) for ESA-TORMES 2.0 and UPC-^{3}Cat-2 Mission, 9/10/2014. Universitat Politècnica de Catalunya.

12. Pol Vila. Research Assistant: Assembly, Integration and Verification (AIV) activities for UPC-^{3}Cat-2 mission, 9/10/2014. Universitat Politècnica de Catalunya.

13. Jaume Jané. Research Assistant: Mechanical Engineering for ESA-TORMES 2.0, 9/10/2014. Universitat Politècnica de Catalunya.

14. Adriá Amèzaga. Research Assistant: On-Board Data Handling (OBDH) System for ESA-TORMES 2.0 and UPC-^{3}Cat-2 mission, 9/10/2014. Universitat Politècnica de Catalunya.

15. Jorge Querol. Research Assistant: Electronics Engineering for ESA-TORMES, 11/10/2013. Universitat Politècnica de Catalunya.

16. Raul Onrubia. Research Assistant: Radio-Frequency (RF) Engineering for ESA-TORMES, 11/10/2013. Universitat Politècnica de Catalunya.

17. Raul Díez. Research Assistant: On-Board Data Handling (OBDH) System for ESA-TORMES, 11/10/2013. Universitat Politècnica de Catalunya.

18. Miguel Angel Ribot. MSc Thesis: "Modification of a FPGA-based GPS Receiver for Reflectometry Applications (GNSS-R)", 28/10/2011. Universitat Politècnica de Catalunya.

Outreach:

1. https://www.nasa.gov/feature/esnt/2022/nasa-earth-science-racks-up-frequent-flier-miles-in-new-zealand-skies

2. https://beyondstandards.ieee.org/a-new-standard-for-a-new-era-in-space/

3. https://www.grss-ieee.org/resources/news/a-new-standard-for-a-new-era-in-space/

4. https://quo.eldiario.es/ciencia/q2111855191/sateligtes-el-dominio-humano-sobre-el-espacio-y-el-tiempo/

5. https://quo.eldiario.es/tecnologia/q2011176774/enjambre-nanosatelites-swarm-evolucion-especies/

6 https://clasp.engin.umich.edu/people/luengo-hugo-carreno/

7. https://standards.ieee.org/project/4003.html

8. https://www.linkedin.com/in/hugo-carreno-luengo/

9. https://news.umich.edu/hurricane-tracking-cygnss-satellite-system-gets-nasa-renewal-as-it-expands-its-reach/

10. https://www.jpl.nasa.gov/news/news.php?feature=7515

11. https://www.nasa.gov/feature/goddard/2020/nasa-new-zealand-partner-to-collect-climate-data-from-commercial-aircraft

12. https://hugo-carreno-luengo.jimdosite.com/

13. https://twitter.com/remotesens_mdpi/status/1182619346704711680?lang=en

14. https://noticiasdelaciencia.com/art/20775/lanzados-los-satelites-mozi-lixing-1-y-3cat-2

15. http://cat.elpais.com/cat/2014/12/23/catalunya/1419294414_625054.html

16. https://www.dicyt.com/noticias/avances-en-el-desarrollo-del-nanosatelite-3cat-2-que-realizara-observaciones-de-altimetria-maritima

17. http://www.losdehonduras.com/etretenimiento/tecnologia/desarrollo-del-nanosatelite-3cat-2/

18. http://foro.astroelche.es/index.php?topic=7035.0

19. http://galia.fc.uaslp.mx/museo/cronopio/2014/Boletin%20No.%201138.pdf

20. https://www.larazon.es/sociedad/tecnologia/los-satelites-se-hacen-mini-AA6165020/

21. https://noticiasdelaciencia.com/art/9947/articulo

22.http://www.esa.int/esl/ESA_in_your_country/Spain/La_campana_BEXUS_18_y_19_termina_con_exito_para_todos_los_estudiantes/%28print%29

23. http://www.esa.int/Education/BEXUS_18_and_19_ends_in_success_for_all_student_teams

24. http://www.esa.int/Education/BEXUS_16_17_balloon_launch_campaign_about_to_start

25. http://setmanaciencia.fundaciorecerca.cat/activitat/els-nano-satel%C2%B7lits-joguines-cares-o-veritables-missions-cientifiques/

26. http://www.eic.cat/promocio/cas/conferencia_3_12.pdf

27. http://www.upc.edu/saladepremsa/al-dia/mes-noticies/experimentant-a-la-frontera-amb-l2019espai

Additional Relevant Items:

1. Proposals writing. ESA REXUS/BEXUS 2012 and 2013. FP7 E-GEM 2014. ESA ITT 2017. NASA CYGNSS 2017. NASA ROSES 2020, 2022, 2023.

2. Researcher at IEEC. Co-Principal Investigator (Co-PI) of a CubeSat mission. 2011-2016.

3. Researcher at UPC - Remote Sensing Laboratory (RSLab). Design and development of space-borne instruments for Earth Remote Sensing. 2011-2016.

4. Researcher at UPC - NanoSat Lab. Mission analysis and design of small satellites. Assembly, Integration and Verification (AIV) activities. Coordination of students' activities. 2011-2016.

5. Space systems engineer at UPC / European GNSS-R Environmental Monitoring (E-GEM). Collaboration with Ms. Stefania Cornara and Mr. Miguel Hagenfeldt (Deimos Space) in the system definition of the satellite ^{3}Cat-2. 2014-2016.

6. Institut Cartogràfic i Geologic de Catalunya (ICGC) airborne experimental campaign to test an innovative space-borne instrument (PYCARO reflectometer) in collaboration with UPC. June 2012.

7. UPC airborne experimental campaign as a proof-of-concept of a CubeSat mission in collaboration with Barcelona Aeronautics and Space Association (BAIE) and Barcelona-Aeroclub Sabadell. September 2011.

8. European Space Agency (ESA) PARIS Interferometry Technique Proof-of-concept (PIT-POC) airborne experimental campaign on-board the Aalto University's research Skyvan Short SC-7 (Laboratory of Space Technology). June 2011.

9. Final Degree Project "Design of a wind turbine". Departamento de Aeronaves y Vehículos Espaciales, ETSIA-UPM. September 2009-July 2010.