Cyril Grima, Ph. D.

Research Associate

Institute for Geophysics, The University of Texas at Austin
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https://cyrilgrima.archenode.net https://github.com/cgrima

Interests

Cryosphere • Mars • Europa • Titan • Antarctica • Arctic • Ionosphere • Radar sounding

Education

2007-2011	PhD	(NO)	Planetary Science	Université Grenoble Alpes, FR
2006-2007	M2R	$(\sim\!MS)$	Solid Earth Geophysics	Université Grenoble Alpes, FR
2005-2006	M2P	$(\sim\!MS)$	Space Technologies	Université Toulouse III, FR
2004-2005	M1	$(\sim\!BS)$	Engineering Physics	Université Grenoble Alpes, FR
2003-2004	L3	$(\sim$ BS-1)	Applied Physics	Université de Versailles, FR
1999-2001	DUT	$(\sim\!AD)$	Mechanical Engineering	Université d'Angoulême, FR

Employment

2015-now	Research Associate Investigation of planetary cryospheres with i	UTIG, Austin, TX, USA radar sounders	
2011-2015	Postdoctoral Fellow Development of a radar technique for planet inition team member for the exploration of paigns in the Antarctic/Arctic • Supervisor: I	Europa • Polar aerogeophysical cam-	
2007-2011	Graduate Student	IPAG, Grenoble, FR	
	Derivation of the purity rate for the Martian r of Martian ice scarps unknown on Earth • Gl reflectivity • Shallow Radar (MRO/SHARAD	lobal mapping of the Mars radar surface	
2006 (6 m.)	Research Fellow	IRF, Kiruna, SE	
	Study of Kelvin-Helmholtz instabilities at the martian ionopause • ASPERA-3 spectro- analyser data set (MarsExpress) • Supervisor: H. Gunell		
2005 (2 m.)	Research Assistant	ISTerre, Grenoble, FR	

Crustal thickness of the western Alps by seismic receiver functions ● Field work on a seismologic station network ● Supervisor: A. Paul

2004 (1 m.) Research Assistant

LATMOS, Verrières-le-Buisson, FR

Assistance in the development of an extrasolar planet detection method ● Supervisor: A. Sarkissian

2003 Mechanical Designer

2MI Group, Montluçon, FR

Design of Isostatic means and foundry equipments for the car industry

Field Experience

2014 (1 m.) Assistant Operator

Qaanaaq, Greenland

Data acquisition/analysis for airborne geophysical surveys

2012 (2 m.) Assistant Operator

East Antarctica

Data acquisition/analysis for airborne geophysical surveys

2012 (1 m.) Assistant Operator

Qaanaaq, Greenland

Data acquisition/analysis for airborne geophysical surveys

2011 (2 m.) Assistant Operator

East Antarctica

Data acquisition/analysis for airborne geophysical surveys

Mission Experience

Co-Investigator • Radar for Europa Assessment and Sounding: Ocean to Near-Surface (REA-SON) • NASA's Europa Clipper

Associate Team Member • Cassini RADAR • NASA's Cassini spacecraft

Co-Investigator • *SOunder for Lunar Volatile Exploration (SOLVE)* • KARI's Korea Pathfinder Lunar Orbiter • (Declined)

Participant ● Radar for Icy Moon Exploration (RIME) ● ESA's Jupiter Icy Moons Explorer

Participant • Shallow Radar (SHARAD) • NASA's Mars Reconnaissance Orbiter

Participant ● Mars Advanced Radar for Subsurface and Ionosphere Sounding (MARSIS) ● ESA's Mars Express spacecraft

Honors & Awards

- Invited Speaker National Oceanography Center Liverpool, UK
 Invited Speaker Center for Planetary Systems Habitability UT Austin, TX
- 2019 Invited Speaker Five Decades of Radioglaciology International Glaciology Society
- 2019 Invited Speaker Colloquium of the Department of Astronomy UT Austin, TX
- 2018 Invited Speaker Planetary Habitability Pop-Up Institute UT Austin, TX
- 2018 **Invited Speaker** International Geoscience and Remote Sensing Symposium Spain, Valencia (Declined due to conflict)

- 2017 Awardee Outstanding Young Researcher UTIG, Austin, TX
- 2016 Invited Panelist Where Is Earth 2.0? SXSW, Austin, Tx
- 2013 **Recognition** Outstanding contribution to Mars Express European Space Agency
- 2012 **Nominee** Thesis Award (22 nominees out of ~900) Grenoble University
- 2011 Awardee Postdoctoral Fellowship UTIG, Austin, TX

Funding History

- 2020-23 **Co-Investigator** Exploration of Saline Cryospheric Habitats with Europa Relevance (ESCHER): An approach using airborne and submarine semiautonomous systems NASA \$3.7M
- 2019-22 **Principal Investigator •** Deciphering the Martian Surface and Near-Surface with Radar statistics NASA \$466K
- 2016-18 **Co-Investigator** Joint Radar and Model Investigations of Greenland Basal Water Conditions NASA \$701K
- 2016-18 **Co-Investigator** East Antarctic Grounding Line Experiment (EAGLE) NSF \$724K
- 2015-30 **Co-Investigator** Radar for Europa Assessment and Sounding: Ocean to Nearsurface (REASON) NASA \$150M
 - 2015 **Principal Investigator** Radar Statistical Reconnaissance of the Martian surface in support of the InSight landing site selection SWRI \$15K
- 2014-17 **Co-Principal Investigator** Surface Statistical Reconnaissance on Titan: Preliminary Assessments with the Cassini Radar JPL \$100K
- 2013-33 **Participant** Jupiter Icy Moon Explorer (JUICE) Radar for Icy Moon Exploration (RIME) ESA \$420K
- 2013-14 **Co-Investigator** Ice Penetrating Radar for Planetary Exploration JPL \$500K
 - 2013 **Co-Principal Investigator** Radar Surface Statistical Reconnaissance of Mars for Landing Site and Geological Characterization of Planetary Bodies JSG seed Grant \$15K
- 2011-13 **Fellow** Postdoctoral Fellowship UTIG, Austin, TX \$180K
- 2007-09 **Co-Principal Investigator** Mars Express MARSIS Level 5 Total Electron Content (TEC) derived data ESA \$60K

Professional Service

- 2020-now **Editorial Board Member ●** "Remote Sensing" peer-reviewed academic journal (2018 impact factor: 4.118)
 - 2020 **Co-Organizer ●** "LPSC at UT" video conference, in reaction to LPSC cancellation due to COVID-19 UT Austin
 - 2020 Organizing Committee Member

 Science from Space Symposium

 UT Austin
- 2019-now Member Earth Science & Space Mission Research Interest Group (RIG) UT Office of the Vice President for Research
- 2019-20 **Guest Lecturer** The habitability of Europa and its investigation by radar sounding GEO 114G, UT Austin

2019-now	Member Fellowship Committee UTIG
2018-now	Co-Director Kristian Chan Ph.D. Committee UT Austin
2017-18	Member ● Technical Staff Evaluation Committee ● UTIG
2015-now	Coordinator • Reflectometry Measurement Implementation Group • REASON Team
2015-now	Coordinator • Plasma Measurement Implementation Group • REASON Team
2015-18	Co-Conveneer ● Radar Investigations of Planetary Surfaces and Subsurfaces ● AGU
	Fall Meeting
2018	Member ● Eric Ivan Petersen Ph.D. Committee ● UT Austin
2017	Member ● Dan Lalich Ph.D. Committee ● UT Austin
2017	Member Wei Wei Examining Committee UT Austin
2017	Member ● Laura Lindzey Examining Committee ● UT Austin
2016	Guest Lecturer • Icy worlds in the solar system • UT Austin
2016	Member ● Postdoctoral Fellowship Committee ● UTIG

Journal Reviewer (Publons) ● Advances in Space Research ● Annals of Glaciology ● The Cryosphere ● Earth and Planetary Science Letters ● Geophysical Research Letters ● Journal of the Geological Society of London ● Journal of Geophysical Research ● IEEE Geoscience and Remote Sensing Letters ● IEEE Transactions on Geoscience and Remote Sensing ● Icarus ● Nature ● Remote Sensing ● Radio Science

Proposal Reviewer ● NASA Maturation of Instruments for Solar System Exploration program ● NASA Future Investigators in NASA Earth and Space Science and Technology program ● NASA CubeSat Launch Initiative ● University of Missouri Research Board Grant

Supervision & Mentorship

2020-now	Russell Miller • GRA
2020-now	Larisa Liberty • URA
2020-now	Sam Christian • URA
2020-now	Miguel Lui-Schiaffini • URA
2019	Christopher Gerekos • Invited GRA
2018-now	Kirk Scanlan • Post-Doc
2018-19	Gregor Steinbrugge ● Post-Doc
2017-now	Kristian Chan • GRA
2014-18	Anja Rutishauser ● GRA
2013-16	Erika Lopez Garcia • URA
2012-14	Arami Rosales • URA
2012-13	Cassidy Cura • High School
2012-13	Blake Karwoski • High School
2012-13	Elena Arnold • High School
2010	Adrien Tavernier • URA
2010	Solmaz Adéli • URA
2009-10	Aurélien Stolzenbach • URA
2008	Anthony Servain ● URA

Outreach

- 2018 Speech at the Geology Club •Texas State University, San Marcos, TX
- 2017 Speech about the Antarctic before 5th and 6th grades' Austin International School (AIS)
- 2016 Speaker for Where Is Earth 2.0? Discovering a Planet Like Ours SXSW, Austin, Tx

Press Releases

- 2018 **Discovery of the First Hypersaline Subglacial Lake ●** inc. Discover Magazine, Phys.org,
- 2017 Titan Hydrocarbon's Lake Smoothness inc. UT News, NBC News, Space.com, Phys.org
- 2015 Radar Instrument Selection for the Europa Mission inc. The Guardian, Ars Technica
- 2009 Ice Purity of the Northerm Martian Polar Cap inc. Agence France Press, France Bleu

Refereed Publications (Metrics)

(*Mentored Students/Postdocs)

- 32. G. Steinbrugge, M. S. Haynes, D. M. Schroeder, K. M. Scanlan, A. Stark, D. A. Young, C. Grima, S. Kempf, G. Ng, D. Buhl, J. R.C. Voigt, T. Roatsch, and D. D. Blankenship, (submitted), Altimetry Measurements from Planetary Radar Sounders and Application to SHARAD on Mars, IEEE Transactions on Geoscience and Remote Sensing, TBD.
- 31. *C. Gerekos, C. Grima, G. Steinbrugge, S. Thakur, K. M. Scanlan, D. A. Young, L. Bruzzone, D. D. Blankenship, (submitted), Martian roughness analogues of Europan terrains and implications on radar backscatter, Icarus, TBD.
- 30. *G. Steinbrugge, R.C. Voigt, D. Schroeder, A. Stark, M. Haynes, K. Scanlan, C. Hamilton, D. A. Young, H. Hussmann, **C. Grima**, D. D. Blankenship, (2020), The Surface Roughness of Europa derived from Galileo Stereo Images, Icarus 343(113669).
- 29. Lopes R. M. C., Wall S. D., Elachi C., Birch S. P. D., Corlies P., Coustenis A., Hayes A. G., Hofgartner J. D., Janssen M. A., Kirk R. L., LeGall A., Lorenz R. D., Lunine J. I., Malaska M. J., Mastroguiseppe M., Mitri G., Neish C. D., Notarnicola C., Paganelli F., Paillou P., Poggiali V., Radebaugh J., Rodriguez S., Schoenfeld A., Soderblom J. M., Solomonidou A., Stofan E. R., Stiles B. W., Tosi F., Turtle E. P., West R. D., Wood C. A., Zebker H. A., Barnes J. W., Casarano D., Encrenaz P., Farr T., Grima C., Hemingway D., Karatekin O., Lucas A., Mitchell K. L., Ori G., Orosei R., Ries P., Riccio D., Soderblom L. A., Zhang Z., (2019), Titan as Revealed by the Cassini Radar, Space Science Reviews 215(4), article id. 33, 50 pp.
- 28. *L. M. Scanlan, C. Grima, G. Steinbrugge, S. D. Kempf, D. A. Young, D. D. Blankenship, (2019), Geometric Determination of Ionospheric Total Electron Content from Dual Frequency Radar Sounding Measurements, Planetary and Space Science 178(104696).
- 27. **Grima C.**, I. Koch, J. S. Greenbaum, K. M. Soderlund, D. D. Blankenship, D. A. Young, D. M. Schroeder, S. Fitzsimons, (2019), Surface and Basal Boundary Conditions at the Southern McMurdo and Ross Ice Shelves, Antarctica, Journal of Glaciology 65(252), 675-688.

- 26. *A. Rutishauser, D.D. Blankenship, M. Sharp, M. L. Skidmore, J. S. Greenbaum, **C. Grima**, D. M. Schroeder, J. A. Dowdeswel and D. A. Young, (2018), Discovery of a hypersaline subglacial lake complex beneath Devon Ice Cap, Canadian Arctic. Science Advances 4(4), eaar4353.
- 25. *G. Steinbrugge, D.M. Schroeder, M.S. Haynes, H. Hussmann, **C. Grima**, D.D. Blankenship, (2018), Assessing the potential for measuring Europa's tidal Love number h2 using radar sounder and topographic imager data, Earth and Planetary Science Letters, Volume 482, 334-341.
- 24. Castelletti D., D. M. Schroeder, S. Hensley, **C. Grima**, G. Ng, D. Young, Y. Gim, L. Bruzzone, A. Moussessian and D. D. Blankenship (2017). *An Interferometric Approach to Cross-Track Clutter Detection in Two Channel VHF Radar Sounders*, IEEE Transactions on Geoscience and Remote Sensing 55(11), 6128 6140.
- 23. **Grima C.**, M. Mastrogiuseppe, A. G. Hayes, S. D. Wall, R. D. Lorenz, J. D. Gardner, B. Stiles, C. Elachi, (2017), *Surface Roughness of Titan's Hydrocarbon Seas*, Earth and Planetary Science Letters 474, 20-24.
- 22. *A. Rutishauser, C. Grima, M. Sharp, D. Blankenship, D. Young, F. Cawkwell, J. Dowdeswell, (2016), *Characterizing near-surface firn using the scattered signal component of the glacier surface return from airborne radio-echo sounding*, Geophysical Research Letters 43(24), pp. 12,502-510.
- 21. Golombek M., D. Kipp, N. Warner, I. J. Daubar, R. Fergason, R. Kirk, R. Beyer, A. Huertas, S. Piqueux, N. E. Putzig, B. A. Campbell, G. A. Morgan, C. Charalambous, W. T. Pike, K. Gwinner, F. Calef, D. Kass, M. Mischna, J. Ashley, C. Bloom, N. Wigton, T. Hare, C. Schwartz, H. Gengl, L. Redmond, J. Sweeney, C. Grima, I. B. Smith, E. Sklyanskiy, M. Lisano, J. Benardino, S. Smrekar, P. Lognonné, W. B. Banerdt, 2016, Selection of the InSight Landing Site, Space Science Reviews 211(1–4), pp 5–95.
- 20. Putzig N. E., G. A. Morgan, B. A. Campbell, **C. Grima**, I. B. Smith, R. J. Phillips, M. P. Golombek, (2016), *Radar derived Properties of the InSight Landing Site in Western Elysium Planitia on Mars*, Space Science Reviews 211(1–4), pp 135–146.
- 19. Schroeder D., B. Campbell, L. Bruzzone, A. Romero-Wolf, D. Blankenship, **C. Grima**, W. Kofman, L. Carrer, (2016), *Assessing the potential for passive radio sounding of Europa and Ganymede with RIME and REASON*, Planetary ans Space Science 134, 52-60.
- Poggiali V., M. Mastrogiuseppe, A. Hayes, R. Seu, S. Birch, R. Lorenz, C. Grima, J. Kargel, J. Hofgartner, (2016), *Liquid Filled Canyons on Titan*, Geophysical Research Letters 43(15), 7887-7894.
- 17. **Grima C.**, J. S. Greenbaum, *E. Lopez Garcia, K. M. Soderlund, *A. Rosales, D. D. Blankenship, D. A. Young, (2016), *Radar detection of the brine extent at McMurdo Ice Shelf, Antarctica, and its control by snow accumulation*, Geophysical Research Letters 43(13), 7011-7018.

- Vance T., J. Roberts, A. Moy, M. Curran, C. Tozer, A. Gallant, N. Abram, T. van ommen,
 D. Young, C. Grima, D. Blankenship, M. Siegert, (2016), Optimal site selection for a high resolution ice core. Clim. Past 12, 595-610.
- 15. **Grima C.**, D. D. Blankenship, D. M. Schroeder. (2015), *Radar Signal Propagation Through the Ionosphere of Europa*. Planetary and Space Science 117, 421-428.
- 14. Schroeder D. M., **C. Grima**, D. D. Blankenship. (2015), *Evidence for Variable Grounding Zone Extent and Shear Margin Bed Conditions Across Thwaites Glacier, West Antarctica*. Geophysics, vol.81, NO 1.
- Sánchez-Cano B., D.D. Morgan, O. Witasse, S.M. Radicella, M. Herraiz, R. Orosei, M. Cartacci, A. Cicchetti, R. Noschese, W. Kofman, C. Grima, J. Mouginot, D.A. Gurnett, M. Lester, P.-L. Blelly, H. Opgenoorth and G. Quinsac, (2015), Total Electron Content in the martian atmosphere: a critical assessment of the Mars Express MARSIS datasets, Journal of Geophysical Research: Space Physics 120(3), 2166-2182.
- 12. **Grima, C.**, Blankenship, D. D., Young, D. A., and Schroeder, D. M. (2014), *Surface slope control on firn density at Thwaites Glacier, West Antarctica: Results from airborne radar sounding*. Geophysical Research Letters 41(19), 6787-6794.
- 11. **Grima, C.**, Schroeder, D. M., Blankenship, D. D., and Young, D. A., (2014), *Planetary landing zone reconnaissance using ice penetrating radar data: concept validation in Antarctica*. Planetary and Space Science 103, 191-204.
- 10. Schroeder, D. M, Blankenship, D. D., Raney, K. R., **Grima, C.**, (2014), *Estimating subglacial water geometry using radar bed echo specularity: application to Thwaites Glacier, Antarctica*. IEEE Geoscience and Remote Sensing Letter 12(3), 443-447.
- 9. **Grima, C.**, (2014), *Comments on 'An inversion of Planetary Rough Surface Permittivity From Radar Sounder Observations'*. IEEE Antenna and Wireless Propagation Letter, 13(1), pp. 1-2
- 8. Lasue, J., Mangold, N., Hauber, E., Clifford, S., Feldman, W., Gasnault, O., **Grima, C.**, Maurice S., Mousis O., (2013), *Quantitative assessments of the martian hydrosphere*. Space Science Reviews, Volume 174, Issue 1-4, 155-212.
- 7. **Grima, C.**, Kofman, W., Herique, A., Orosei, R., and Seu, R., (2012), *Quantitative analysis of Mars surface radar reflectivity at 20 MHz*. Icarus, 220, 84-99.
- Grima, C., Costard, F., Kofman, W., Saint-Bézar, B., Servain, A., Rémy, F., Mouginot, J., et al., (2011), Large asymmetric polar scarps on Planum Australe, Mars: Characterization and evolution. Icarus, 212(1), 96-109.
- 5. Mouginot, J., Pommerol, a., Kofman, W., Beck, P., Schmitt, B., Hérique, A., **Grima, C.**, et al., (2010), *The 3-5MHz global reflectivity map of Mars by MARSIS/Mars Express: Implications for the current inventory of subsurface H2O*. Icarus, 210(2), 612-625.

- Pommerol, A., Kofman, W., Audouard, J., Grima, C., Beck, P., Mouginot, J., Hérique, A., et al., (2010), Detectability of subsurface interfaces in lunar maria by the LRS/SELENE sounding radar: Influence of mineralogical composition. Geophysical Research Letters, 37(3), 1-5.
- 3. **Grima, C.**, Kofman, W., Mouginot, J., Phillips, R. J., Hérique, A., Biccari, D., Seu, R., et al. (2009), *North polar deposits of Mars: Extreme purity of the water ice*. Geophysical Research Letters, 36(3), 2-5.
- 2. Mouginot, J., Kofman, W., Safaeinili, A., **Grima, C.**, Hérique, A., and Plaut, J. J. (2009), *MARSIS surface reflectivity of the south residual cap of Mars*. Icarus, 201(2), 454-459.
- 1. Gunell, H., Amerstorfer, U. V, Nilsson, H., **Grima, C.**, Koepke, M., Fränz, M., Winningham, J. D., et al. (2008) *Shear driven waves in the induced magnetosphere of Mars*. Plasma Physics and Controlled Fusion, 50(7), 074018.

Academic and Technical Reports

- Young D. A., N. Wolfenbarger, T. Richter, C. Grima and K. Soderlund, 2019, Science Verification and Validation Point Models for REASON, Jet Propulsion Laboratory Interoffice Memorandum, IOM-REASON-2019-001.
- 8. **Grima C.**, 2017, *Europa Radio Noise Shadow*, Jet Propulsion Laboratory Interoffice Memorandum, IOM-REASON-2017-001.
- 7. **Grima C.**, 2014, *Europa Space Environment and Radar Operations*, White paper for the "Ice Penetrating Radar team for the Instrument Concept for Europa Exploration" (ICEE) program (JPL/NASA).
- Schroeder D.M., Grima C., Blankenship D.D., 2012, Assessing the Utility of the Europe Clipper Radar Sounder to Identify Potential Landing Sites, White paper for the "Europa Science Definition Team", July 2012
- 5. **Grima C.**, 2011, _Surface et subsurface de Mars par sondage radar : Analyse des données MRO/Sharad _, Thèse de doctorat, Université de Grenoble.
- 4. **Grima C.**, Witasse O., and Orosei R., 2009, *MEX-MARSIS subsurface (SS) mode: Total electron content (TEC) of the ionosphere level 5 derived data.* Experimental to planetary archive interface control document (EAICD). European Space Agency.
- 3. **Grima, C.**, and Kofman, W., 2008, *lonospheric impact on MARSIS radar signal*. ESA European Space Agency contract report No 21646/08/NL/NR, volume 1.
- 2. **Grima, C.**, and Kofman, W., 2008, *Correcting the ionospheric impact on MARSIS radar signal*. European Space Agency study contract report No 21646/08/NL/NR, volume 2.
- 1. **Grima, C.**, and Kofman, W., 2008, *MARSIS derived enhanced ionospheric calibration data*. European Space Agency study contract report No 21646/08/NL/NR, volume 3.

International Conferences

2020

- [Invited] C. Grima, The Habitability of Europe and its Investigation by Radar Sounding, National Oceanography Center Seminar, Liverpool, UK.
- C. Grima, C. Gerekos, K. M. Scanlan, G. Steinbrugge, D. A. Young, S. D. Kempf, and D. D. Blankenship Mars as an Analog to Anticipate Radar Surface Reflectivity at Europa, 51th Lunar and Planetary Science Conference, The Woodlands, TX, Abstract 1471. [Canceled due to COVID-19]
- D. A. Young, D. D. Blankenship, N. S. Wolfenbarger, C. Grima, K. M. Soderlund, K. F. Chan, T. G. Richter, and the REASON Science Team, An Ensemble of Point Models Approach for Science Verification and Validation for Europa Clipper's REASON (Radar for Europa Assessment and Sounding: Ocean to Near-surface, 51th Lunar and Planetary Science Conference, The Woodlands, TX, Abstract 2918. [Canceled due to COVID-19]
- K. M. Scanlan, D. A. Young, G. Steinbrügge, C. Grima, S. D. Kempf and D. D. Blankenship Quantitative Approaches to Assess the Quality in Synthetic Aperture Radar Focusing for Orbital Radar Sounding Datasets, 51th Lunar and Planetary Science Conference, The Woodlands, TX, Abstract 1591. [Canceled due to COVID-19]
- [Invited] C. Grima, The Advent of Cryospheres & the Concatenation of Worlds, Inaugural talk to the Center for Planetary Systems and Habitability (CPSH) seminar series, UT Austin, TX.

- D. Young, J. Greenbaum, D. Blankenship, M. Siegert, J. Roberts, T. van Ommen, A. Aitken6,
 C. Grima, E. Le Meur and The ICECAP collaboration, ICECAP's contribution to NASA's Operation IceBridge in East Antarctica, AGU Fall Meeting 2019, San Francisco, CA.
- S. Christian, M. Liu-Schiaffini, A. Rutishauser, K. Chan, C. Grima and D. Blankenship, Investigating Ice Surface Elevations Derived from Laser and Radar-sounding Measurements Over Devon Ice Cap, Canadian Arctic, AGU Fall Meeting 2019, San Francisco, CA.
- G. Steinbrügge, M. Haynes, K. Scanlan, D. Young, C. Grima, S. Kempf, D. Schroeder and D. Blankenship, SHARAD Altimetry on Mars: Towards an improved, global digital terrain model, AGU Fall Meeting 2019, San Francisco, CA.
- K. Scanlan, L. Beem, C. Grima, D. Buhl, D. Young and D. Blankenship, Differentiating Subglacial Drainage Patterns through the Depolarization of Airborne Radar Sounding Measurements, AGU Fall Meeting 2019, San Francisco, CA.
- K. Chan, A. Rutishauser, C. Grima and D. Blankenship, Detection of Near-Surface Frozen Brines at Europa: Radar Investigation of a Canadian Arctic Analog, AGU Fall Meeting 2019, San Francisco, CA.

- C. Gerekos, C. Grima, G. Steinbrügge, K. Scanlan, D. Young, L. Bruzzone, and D. Blankenship Comparing the multifractal properties of Europan and Martian surfaces EPSC-DPS Joint Meeting 2019, Geneva, Switzerland, Abstract EPSC-DPS2019-330.
- G. Steinbrügge, J.R.C. Voigt, D.M. Schroeder, A. Stark, M.S. Haynes, K.M. Scanlan, C.W. Hamilton, D.A. Young, H. Hussmann, C. Grima, D.D. Blankenship Reassessing Europa's Surface Roughness EPSC-DPS Joint Meeting 2019, Geneva, Switzerland, Abstract EPSC-DPS2019-865.
- [Invited] C. Grima Planetary Analogy and Radioglaciology, Five Decades of Radioglaciology, IGS Symposium, Stanford, California, Abstract 81A3081.
- A. Romero-Wolf, D. M. Schroeder, S. Peters, B. Bills, D. D. Blankenship, L. Bruzzone, B. Campbell, L. Carrer, C. Grima, E. Heggy Status and prospects of passive sounding with radio-astronomical sources, Five Decades of Radioglaciology, IGS Symposium, Stanford, California, Abstract 81A3009.
- K. M. Scanlan, G. Steinbruegge, S. D. Kempf, **C. Grima**, D. A. Young, D. D. BlankenshipAlternative strategies for synthetic aperture radar focusing of orbital radar sounding measurements, Five Decades of Radioglaciology, IGS Symposium, Stanford, California, Abstract 81A3054.
- A. Rutishauser, D. D. Blankenship, L. Beem, J. S. Greenbaum, D. A. Young, C. Grima, L. N. Schwartz, J. A. Foran, A. Criscitiello New radar-sounding investigations over the hypersaline subglacial lakes beneath Devon Ice Cap, Canadian Arctic, Five Decades of Radioglaciology, IGS Symposium, Stanford, California, Abstract 81A3055.
- D. A. Young, C. Grima, G. Steinbrügge, K. M. Scanlan, S. D. Kempf, D. D. Blankenship REASON for Europa: data products and algorithms, Five Decades of Radioglaciology, IGS Symposium, Stanford, California, Abstract 81A3056.
- J. S. Greenbaum, D. M. Schroeder, C. Grima, N. Gourmelen, C. Dow, F. Habbal, J. Roberts, R. Warner, D. Gwyther Surface and basal melting of the Totten Glacier Ice Shelf, East Antarctica, Five Decades of Radioglaciology, IGS Symposium, Stanford, California, Abstract 81A3067.
- T. Creyts, D. M. Schroeder, C. Grima, W. Chu, T. M. Jordan, J. Paden, R. Culberg Bed roughness as a control on the drainage of subglacial water, Five Decades of Radioglaciology, IGS Symposium, Stanford, California, Abstract 81A3175.
- [Invited] C. Grima The Habitability of Europa and its Investigation by Radar Sounding, Department of Astronomy Colloquium, UT Austin, TX.
- G. Steinbrügge, K.M.Scanlan, D.A. Young, C. Grima, S.D.Kempfand and D.D. Blankenship Sharad Radar Altimetry and Geodesy, 50th Lunar and Planetary Science Conference (2019), The Woodlands, TX, Abstract 1993.
- K. M. Scanlan, D. A. Young, C. Grima, G. Steinbrügge, S. D. Kempf and D. D. Blankenship Englacial radar Attenuation Rates in the Promethei Lingula Area of the Martian South Polar Layered Deposits, 50th Lunar and Planetary Science Conference (2019), The Woodlands, TX, Abstract 1994.

C. Grima, G. B. Steinbrügge, K. M. Scanlan, D. A. Young, N. E. Putzig, M. R. Perry, B. A. Campbell, S. D.Kempf and D. D. Blankenship Deciphering the martian Surface and near-surface with Radar Statistiscs, 50th Lunar and Planetary Science Conference (2019), The Woodlands, TX, Abstract 1280.

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