# Cyril Grima, Ph. D.

Research Associate

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## Interests

Surface Processes • Cryosphere • Mars • Europa • Moon • Titan • Antarctica • Arctic • Ionosphere • Radar reflectometry • Radar sounding

## Education

| | | | | |
|---|---|---|---|---|
| 2007-2011 | **PhD** | | **Planetary Science** | Université Grenoble Alpes, FR |
| 2006-2007 | **M2R** | (∼MS) | **Solid Earth Geophysics** | Université Grenoble Alpes, FR |
| 2005-2006 | **M2P** | (∼MS) | **Space Technologies** | Université Toulouse III, FR |
| 2004-2005 | **M1** | (∼BS) | **Engineering Physics** | Université Grenoble Alpes, FR |
| 2003-2004 | **L3** | (∼BS-1) | **Applied Physics** | Université de Versailles, FR |
| 1999-2001 | **DUT** | (∼AD) | **Mechanical Engineering** | Université d'Angoulême, FR |

## Employment

2015-now **Research Associate** UTIG, Austin, TX, USA
*Investigation of Earth and planetary cryospheres with radar sounders*

2011-2015 **Postdoctoral Fellow** UTIG, Austin, TX, USA
*Development of a radar technique for planetary surface assessment* • *Science definition team member for the exploration of Europa* • *Polar aerogeophysical campaigns in the Antarctic/Arctic* • Supervisor: D. D. Blankenship

2007-2011 **Graduate Student** IPAG, Grenoble, FR
*Derivation of the purity rate for the Martian north polar cap* • *Formation hypothesis of Martian ice scarps unknown on Earth* • *Global mapping of the Mars radar surface reflectivity* • *Shallow Radar (MRO/SHARAD) data* • Supervisor: W. Kofman

2006 (6 m.) **Research Fellow** IRF, Kiruna, Sweden
*Study of Kelvin-Helmholtz instabilities at the martian ionopause* • *ASPERA-3 spectroanalyser 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, FR

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

2003 **Mechanical Designer** 2MI, Montluçon, FR

*Design of Isostatic 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

2022 **International Mars Ice Mapper (I-MIM)** NASA, ASI, CSA, JAXA
Member of the *Reconnaissance/Science Measurement Definition Team*

2015-now **Europa Clipper** NASA
Co-I for *Radar for Europa Assessment and Sounding: Ocean to Near-surface (REASON)*
Co-Chair for the *Reconnaissance Focus Group*
Member of the *JUICE/Clipper Science Steering Committee*
Coordinator of the *Reflectometry Measurement Implementation Group (REASON)*
Coordinator of the *Plasma Measurement Implementation Group (REASON)*

2015-2017 **Cassini Spacecraft** NASA
Associate Team Member for the *Cassini RADAR*

2014-now **Jupiter Icy Moons Explorer (JUICE)** ESA
US Collaborator to the *Radar for Icy Moon Exploration (RIME)*
Member of the *JUICE/Clipper Science Steering Committee*

2007-now **Mars Reconnaissance Orbiter (MRO)** NASA
Collaborator to the *Shallow Radar (SHARAD)*

2007-2011 **Mars Express** ESA

Collaborator to the *Mars Adv. Radar for Subsurface and Ionosphere Sounding (MARSIS)*
Co-author of the *MARSIS total Electron Content of the Ionosphere Derived Data Product*

# Honors & Awards

2021 **Awardee** • Director's Circle of Excellence • UTIG, Austin, TX
2017 **Awardee** • Outstanding Young Researcher • UTIG, Austin, TX
2013 **Awardee** • Outstanding contribution to Mars Express • European Space Agency
2012 **Nominee** • PhD Thesis Award (22 nominees out of $\sim$900) • Grenoble University
2011 **Awardee** • Postdoctoral Fellowship • UTIG, Austin, TX

## Invitations

2022 **Invited Speaker** • Reconnaissance Focus Group • NASA Europa Clipper Science Team
2022 **Invited Speaker** • Geology Foundation Advisory Council Meeting • Jackson School of Geosciences, UT Austin, TX
2022 **Invited Panelist** • Europa Lander Speaker Series • JPL/Caltech, online.
2021 **Invited Speaker** • "Brines Across the Solar System: Modern brines" conference, LPI • Houston, TX
2021 **Invited Co-Organizer** • "Brines Across the Solar System: Modern brines" conference, LPI • Houston, TX
2020 **Invited Speaker** • National Oceanography Center • Liverpool, UK
2020 **Invited Speaker** • Center for Planetary Systems Habitability • UT Austin, TX
2019 **Invited Member** • Reviewer board • Remote Sensing (ISSN 2072-4292)
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)
2016 **Invited Panelist** • Where Is Earth 2.0? • SXSW, Austin, TX
2012 **Invited Speaker** • Laboratoire d'Etudes en Géophysique et Océanographie Spatiales • Toulouse, France
2012 **Invited Speaker** • Institut de Planétologie et d'Astrophysique • Grenoble, France

# Funding History

2022–25 **Co-Investigator** • Integrated Measurements and Analysis of Geophysics of Schrodinger (IMAGES) • NASA • $400K
2021–24 **Co-Chair** • Europa Clipper Reconnaissance Focus Group • NASA • $80K
2021 **Co-Principal Investigator** • Modeling firn densification due to melting, percolation & refreezing • UTIG Blue Sky Student Fellowship • 1 year of student funding ($60K).
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 Near-surface (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

2006 **Grantee** ● Mobility grant ● French Department of Charente-Maritime ● 950 €

2006 **Grantee** ● Mobility grant ● French Ministry of Education ● 2334 €

2006 **Grantee** ● Mobility grant ● French Regional Council of Midi-Pyrénées ● 1800 €

## Professional Service

2022-now **Member** ● JUICE/Clipper Science Steering Committee ● ESA/NASA

2022-now **Member** ● Postdoctoral Fellowship Committee ● JSG

2022 **Member** ● Research Staff Committee Search ● UTIG

2021-2022 **Chair** ● Graduate Fellowship Committee ● UTIG

2021-now **Co-Chair** ● Landing Site Reconnaissance Focus Group ● NASA's Europa Clipper Science Team

2021-2022 **Member** ● Annual Performance Evaluation Committee ● UTIG

2020-2022 **Member** ● Postdoctoral Fellowship Committee ● UTIG

2020-now **Editorial Board Member** ● "Remote Sensing" peer-reviewed academic journal (2018 impact factor: 4.118)

2019-now **Guest Lecturer** ● Geophysics Colloquium ● GEO 114G, UT Austin

2015-now **Coordinator** ● Reflectometry Measurement Implementation Group ● REASON Team

2015-now **Coordinator** ● Plasma Measurement Implementation Group ● REASON Team

2015-now **Co-Conveneer** ● Radar Investigations of Planetary Surfaces and Subsurfaces ● AGU Fall Meeting

2021 **Member [Invited]** ● Science Organization Committee for the "Brines Across the Solar System: Modern brines" conference ● LPI, Houston, TX

2019–2021 **Member** • Fellowship Committee • UTIG
2019–2020 **Member** • Earth Science & Space Mission Research Interest Group (RIG) • UT Office of the Vice President for Research
2020 **Guest Lecturer** • Planetary Geology and Geophysics • GEO 366P, UT Austin
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 [Canceled due to COVID-19]
2017–18 **Member** • Technical Staff Evaluation Committee • UTIG
2017 **Member** • Laura Lindzey Examining Committee • UT Austin
2016 **Guest Lecturer** • Icy worlds in the solar system • UT Austin

### 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 • Nature Astronomy • The Planetary Science Journal • 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

### Community Software Development/Maintenance (GitHub)

- **Radar Statistical Reconnaissance (rsr) python package** • Tools for statistical radiometry analysis • Available on GitHub and PyPI
- **I-Librarian Docker container** • Provides easy containerization for the deployment of I, Librarian, a free and open source web application to build a science library • Available on GitHub and DockerHub • **>500K Pulls**

## Mentorship

### Post-Doctoral Collaborators

2021–now Christopher Gerekos
2018–21 Kirk Scanlan
2018–19 Gregor Steinbrugge
2016–19 Inka Koch

### Graduate Students

| | | | |
|---|---|---|---|
| 2023-now | Mercedes T. Jordan | [MS] | (Co-supervisor) |
| 2020-22 | Russell C. Miller | [MS] | (Co-supervisor) |
| 2020-now | Mohammad Afzad Shadab | [PhD] | (Committee Member) |
| 2017-now | Kristian Chan | [PhD] | (Co-supervisor) |
| 2016-21 | Wei Wei | [PhD] | (Committee Member) |
| 2018 | Eric Ivan Petersen | [PhD] | (Committee Member) |
| 2018 | Dan Lalich | [PhD] | (Committee Member) |
| 2014-18 | Anja Rutishauser | [PhD, Canada] | (Informal Mentoring) |

### Undergraduate Students

| | |
|---|---|
| 2020 | Larisa Liberty |
| 2013-16 | Erika Lopez Garcia |
| 2010 | Adrien Tavernier |
| 2010 | Solmaz Adéli |
| 2009-10 | Aurélien Stolzenbach |
| 2008 | Anthony Servain |

### High-School Students

| | |
|---|---|
| 2020-22 | Miguel Lui-Schiaffini |
| 2020-21 | Sam Christian |
| 2012-14 | Arami Rosales |
| 2012-13 | Cassidy Cura |
| 2012-13 | Blake Karwoski |
| 2012-13 | Elena Arnold |

## Outreach

2022 **Classroom Talk** • Avon Middle School, CT.
2018 **Talk at the Geology Club** • Texas State University, San Marcos, TX
2017 **Classroom Talk** • Austin International School (AIS), TX
2016 **Speaker for Where Is Earth 2.0?** Discovering a Planet Like Ours • SXSW, Austin, Tx

## Press Releases

2022 **Hope for Present-Day Martian Groundwater Dries Up** • inc. UT, The Times, New Scientist, Popular Science, Universe Today, ScienceAlert, Eos, SyFy
2017 **Calm Lakes on Titan Could Mean Smooth Landing for Future Space Probes** • inc. UT, NBC, Space.com
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)

#### In Review

- *R. C. Miller, **Grima C.**, Gulick S. P. S., Goudge T. A., Russell A., Perry M., Putzig N., Campbell B., (submitted), Dynamic Development of the Athabasca Valles Outflow System from Volcanic Facies and 15-m Scale Roughness, Icarus.

T. M Becker et al. (inc. **Grima C.**), (submitted), Exploring the Composition of Europa with the upcoming Europa Clipper mission, Space Science Reviews.

- Daubar et al. (inc. **Grima C.**), (submitted), Planned Geological Investigations of the Europa Clipper Mission, Space Science Reviews.
- *K. Chan, **C. Grima**, A. Rutishauser, D. A. Young, R. Culberg, and D. D. Blankenship, (submitted), Spatial characterization of near-surface structure and meltwater runoff conditions across Devon Ice Cap from dual-frequency radar reflectivity, The Cryosphere, tc-2022-181.

**Published**

36. **Grima C.**, N. E. Putzig, B. A. Campbell, M. Perry, S. P. S. Gulick, R. C. Miller, A. T. Russell, K. M. Scanlan, G. Steinbrügge, D. A. Young, S. D. Kempf, G. Ng, D. Buhl, and D. D. Blankenship, (2022), Investigating the Martian Surface at Decametric Scale: Population, Distribution and Dimension of Hetereogeneities from Radar Statistics, The Planetary Science Journal 3(10), p236.

35. *M. Liu-Schiaffini, G. Ng, **C. Grima** and D. Young, (2022), Ice Thickness from Deep Learning and Conditional Random Fields: Application to Ice Penetrating RadarData with Radiometric Validation, IEEE Transactions on Geoscience and Remote Sensing, in press.

34. **Grima C.**, J. Mouginot, W. Kofman, A. Hérique and P. Beck, (2022), The Basal Detectability of an ice-covered Mars by MARSIS, Geophysical Research Letters 49(2), e2021GL096518.

33. 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, (2022), Altimetry Measurements from Planetary Radar Sounders and Application to SHARAD on Mars, IEEE Transactions on Geoscience and Remote Sensing, vol. 60, pp. 1-14, 2022, Art no. 5109214.

32. **K. M. Scanlan, D. A. Young, G. Steinbrügge, S. D. Kempf, **C. Grima**, and D. D. Blankenship, (2021), Delay Doppler SAR Focusing and Quantitative Quality Control of Future REASON Data, IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing, 14, 4352-69.

31. **C. Gerekos, **C. Grima**, G. Steinbrugge, S. Thakur, K. M. Scanlan, D. A. Young, L. Bruzzone, D. D. Blankenship, (2021), Martian roughness analogues of Europan terrains and implications on radar backscatter, Icarus 358, 114197.

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 #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.

18. 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.

16. 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.

13. 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.

6. **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.

4. 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

11. Gerekos C, **Grima C.**. (2022), *On IEM and Fractal Backscattering Laws for REASON Measurement Quality Verification and Validation*, Jet Propulsion Laboratory Interoffice Memorandum, IOM-REASON-2022-003.

10. Reconnaissance/Science Measurement Definition Team, (2022), International Mars Ice Mapper Mission, Final Report, ASI/CSA/JAXA/NASA/NSO.

9. 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).

6. 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. Experimenter to planetary archive interface control document (EAICD). European Space Agency.

3. **Grima, C.**, and Kofman, W., (2008), Ionospheric 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.

## Conferences

118. **[Invited Speaker] Grima C.**, Deciphering the (Near-)Surface of Planets with Nadir-pointing Radar Statistics, EGU General Assembly 2023, Vienna, Austria, EGU23-2134.

117. Chan, K., **Grima C.**, D. D. Blankenship, RIME-REASON synergistic opportunities for surface and near-surface investigations of icy moons, EGU General Assembly 2023, Vienna, Austria, EGU23-10554.

116. **Grima C.**, W. Kofman, A. Hérique, P. Beck, Frequency Dispersion of the Martian Surface Reflectivity by MARSIS, 54th Lunar and Planetary Science Conference 2023, The Woodlands, TX, Abstract.

2022 --

115. Chan K., **C. Grima**, J. Moore and D. D. Blankenship, Multi-frequency Radar Characterization of Ganymede's Near-surface, Earth and Planetary Science Conference, Granada, Spain, #EPSC2022-743.

114. **[Invited Speaker] Grima C.**, and the REASON Team, Assessing (Near-)Surface Properties from REASON Reflectometry, Europa Clipper Reconnaissance Focus Group, Remote.

113. Gerekos C., M. Haynes, **C. Grima**, D. D. Blankenship, The Stratton-Chu Integral with a rough Facet Formulation for All-Scale Radar Sounder Simulations: Assessment with Reflectometry, IGARSS 2022, #3558, Kuala Lumpur, Malaysia.

112. Chan K., **C. Grima**, A. Rutishauser, D. A. Young, R. Culberg, D. D. Blankenship, Ice layer detection, distribution, and thickness in the near-surface firn on Devon Ice Cap: a new dual-frequency radar characterization approach, EGU General Assembly 2022, EGU22-6414, Vienna, Austria.

111. Phillips. C, J. E. C. Scully, M. E. Cameron, K. L. Craft, **C. Grima**, D. M. Persaud and K. P. Hand, A Reconnaissance Strategy for Landing on Europa, based on Europa Clipper Data, AbSciCon, Atlanta, USA, Abstract #521-04.

110. Scully J. E. C., C. B. Phillips, M. E. Cameron, K. Craft, D. M. Persaud, **C. Grima**, and K. P. Hand, Applying Lessons Learned from Previous Planetary Missions to the Europa Lander Mission Concept, AbSciCon, Atlanta, USA, Abstract #406-03.

109. **[Invited Speaker] C. Grima** Hope for Present-Day Martian Groundwater Dries Up, Geology Foundation Advisory Council, March 4th Meeting, Jackson School of Geosciences, UT Austin, TX

108. **Grima C.**, J. Mouginot, W. Kofman, A. Hérique, P. The Basal Detectability of an Ice Covered Mars by MARSIS, 53th Lunar and Planetary Science Conference, The Woodlands, TX, Abstract #1202.

107. **Grima C.**, N. E. Putzig, B. A. Campbell, M. R. Perry, S. P. Gullick, R. C. Miller, A. T. Russell, K. M. Scanlan, G. Steinbrügge, D. A. Young, S. D. Kempf, G. Ng, D. Buhl, D. D. Blankenship, Martian Roughness at 15-m Scale from Radar Statistics, 53th Lunar and Planetary Science Conference, The Woodlands, TX, Abstract #1198.

106. Miller, R., **C. Grima**, S. P. S. Gulick, T. Goudge, N.E. Putzig, M.R. Perry, A. T. Russell, B.A. Campbell, Volcanic Facies and 15m Scale Roughness Throughout Athabasca Valles Lava System: A Multi-Stage Flow Development, 53th Lunar and Planetary Science Conference, The Woodlands, TX, Abstract #1554.

105. Phillips C., Scully J. E. C., Cameron M. E., Craft K. L., **Grima C.**, D. M. Persaud, and K. P. Hand, A Reconnaissance Strategy for Landing on Europa, Based on Europa Clipper Data, 53th Lunar and Planetary Science Conference, The Woodlands, TX, Abstract #2150.

104. Russell, A., M. R. Perry, N. E. Putzig, **C. Grima**, R. C. Miller, S. S. Gulick, Understanding Elysium Planitia Through Statistical and Standard Radar Analysis, 53th Lunar and Planetary Science Conference, The Woodlands, TX, Abstract #2782.

103. Gulick S. P. S., **Grima C.**, Gerekos C., Kramer G., Geophysical Characterization Opportunities in Schrödinger Impact Basin Using Kaguya Lunar Radar Sounder and Lunar Reconaissance Orbiter, 53th Lunar and Planetary Science Conference, The Woodlands, TX, Abstract #1739.

102. Scully J., C. B. Phillips, M. E. Cameron, K. Craft, D. M. Persaud, **C. Grima**, and K. P. Hand, The Application of Lessons Learned from Previous Landing and/or Sampling Missions to the Europa Lander Mission Concept, 53th Lunar and Planetary Science Conference, The Woodlands, TX, Abstract #2291.

101. **[Invited Panelist] C. Grima**, Europa Lander Speaker Series, Caltech/JPL, online.

2021 --

100. M. A. Shadab, **C. Grima**, A. Rutishauser and M. A. Hesse, Analytical Solutions for Melt Percolation in Ice Masses and a Pathway to Ice Lens Formation, AGU Fall Meeting, 2021, New Orleans, LO.

99. **[Invited] C. Grima**, The Europa Clipper Mission and the Search for Brine, Brines Across the Solar System: Modern Brines, LPI conference, October 2021, Online.

98. **[Invited] C. Grima**, Deciphering the surface and near-surface of planets with radar statistics, UTIG seminar, Online.

97. **C. Grima**, N. E. Putzig, B. A. Campbell, M. R. Perry, K. M. Scanlan, The Coherent Character of the Martian Surface at 20 MHz, 52th Lunar and Planetary Science Conference, Online, Abstract 1221.

96. M. Liu-Schiaffini, S. Christian, R. C. Miller, **C. Grima**, G. Ng, S. S. Gullick, Machine Learning Classification of the Martian Surface: Application to Radar Reflectometry, 52th Lunar and Planetary Science Conference, Online, Abstract 1224.

95. **[Invited] C. Grima**, Deciphering the Surface of Planetary Cryospheres with Radar Sounders, Sci-to-Sci event, the Consulate General of France in Houston, Online.

2020 --

94. K. M. Scanlan, G. Steinbruegge, **C. Grima**, D. A. Young and D. D. Blankenship, Impact of 1-Bit Sampling of Radar Sounding Data for Deep Space Applications: Demonstration at Mars and Implications for Europa, AGU Fall Meeting 2020, Online.

93. G. Steinbrügge, D. M. Schroeder, M. Haynes, K. M. Scanlan, D. A. Young, **C. Grima**, A. Stark, H. Hussmann and D. D. Blankenship, Altimetry from Planetary Radar Sounders, AGU Fall Meeting 2020, Online.

92. **[Invited] C. Grima**, The Habitability of Europe and its Investigation by Radar Sounding, National Oceanography Center Seminar, Liverpool, UK, Online.

91. **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]*

90. 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]*

89. 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]*

88. **[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.

2019 --

87. 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.

86. 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.

85. 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.

84. 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.

83. 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.

82. 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.

81. 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.

80. **[Invited] C. Grima** Planetary Analogy and Radioglaciology, Five Decades of Radioglaciology, IGS Symposium, Stanford, California, Abstract 81A3081.

79. 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.

78. 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.

77. 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.

76. 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.

75. 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.

74. 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.

73. **[Invited] C. Grima** The Habitability of Europa and its Investigation by Radar Sounding, Department of Astronomy Colloquium, UT Austin, TX.

72. 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.

71. 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.

70. **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.

2018 --

69. D. A. Young, **C. Grima**, G. Steinbrugge, K. M. Scanlan, S. D. Kempf, D. D. Blankenship REASON For Europa: Data products and algorithms, AGU Fall Meeting 2018, Washington, DC, P51G-2955.

68. G. Steinbrugge, J. R. C. Voigt, A. Stark, B. Giese, D. M. Schroeder, M. Haynes, D. A. Young, **C. Grima**, H. Hussmann, D. D. Blankenship Reassessing the surface roughness of Europa using Galileo stereo images, AGU Fall Meeting 2018, Washington, DC, P42B-05.

67. F. Habbal, J. S. Greenbaum, **C. Grima**, D. A. Young, J. L. Roberts, T. D. van Ommen, D. D. Blankenship Using radar sounding to detect grounding line positions with evidence of modern grounding line retreat in East Antarctica , AGU Fall Meeting 2018, Washington, DC, C51F-1130.

66. T. T. Creyts, W. Chu, **C. Grima**, D. M. Schroeder Bed roughness as a control on the drainage of subglacial water, AGU Fall Meeting 2018, Washington, DC, C51E-1107.
-A. Rutishauser, D. D. Blankenship, L. Beem, J. S. Greenbaum, D. A. Young, **C. Grima**, A. S. Criscitiello New insights from an airborne geophysical survey over the hypersaline subglacial lakes beneath Devon Ice Cap, Canadian Arctic, AGU Fall Meeting 2018, Washington, DC, C51E-1105.

65. K. Chan, **C. Grima**, D. D. Blankenship, K. M. Soderlund, D. A. Young Dielectric Brine-Ice Mixtures on Europa, and the Need for New Experiments, Europa Deep Dive 2: Composition, #3015, October 2018, Houston, TX.

64. N. S. Wolfenbarger, D. D. Blankenship, K. M. Soderlund, D. A. Young, and **C. Grima** Leveraging Terrestrial Marine Ice Cores to Constrain the Composition of Ice on Europa, Europa Deep Dive 2: Composition, #3036, October 2018, Houston, TX.

63. **[Invited] C. Grima** Terrestrial Analogs of Icy Worlds, Planetary Habitability Pop-Up Institute, Universtiy of Texas at Austin.

62. D. Blankenship, A. Moussessian, J. Plaut, G. W. Patterson, Y. Gim, D. Schroeder, K. Soderlund, D. Young, **C. Grima**, E. Chapin REASON for Europa, COSPAR Assembly (2018), Pasadena, CA, Paper 24665.

61. **C. Grima**, D. D. Blankenship, C. Paty, Y. Gim, W. Kurth, E. Chapin, D. M. Schroeder, J. J. Plaut, G. Patterson, A. Moussessian, D. A. Young Investigating Europa's Plasma Environment from radar Sounding, COSPAR Assembly (2018), Pasadena, CA, Paper 24685.

60. Y. Brouet, R. Cerubini, A. Pommerol, N. Thomas, L. Neves, P. Sabouroux. **C. Grima**, Dielectric spectroscopy measurements of saline aqueous solutions in the VHF-UHF bands: towards a dielectric model for icy satellites water reservoirs, 5th IEEE International Workshop on Metrology for Aerospace, Rome, Italy (2018).

59. B. S. Tober, J. W. Holt, **C. Grima**, J. S. Levy Radar Reflectivity Analysis of Boulder Halos on Mars: Is Subsurface Ice the Culprit?, 49th Lunar and Planetary Science Conference (2018), Houston, TX, Abstract 2935.

2017 --

58. **C. Grima**, I. Koch, J.S. Greenbaum, K.M. Soderlund, D.D. Blankenship, D.A. Young, S. Fitzsimons. Surface and basal ice shelf mass balance processes of the Southern McMurdo Ice Shelf determined through radar statistical reconnaissance, AGU Fall Meeting 2017, New Orleans, USA, C51B-0977.

57. J.S. Greenbaum, D.D. Blankenship, **C. Grima**, D.M. Schroeder, K.M. Soderlund, D.A. Young, S.D. Kempf, M.J. Siegert, J.L. Roberts, R.C. Warner, T.D. van Ommen. Remote Characterization of Ice Shelf Surface and Basal Processes: Examples from East Antarctica (Invited), AGU Fall Meeting 2017, New Orleans, USA, P53H-01.

56. A. Rutishauser, M.J. Sharp, D.D. Blankenship, M.L. Skidmore, **C. Grima**, D.M. Schroeder, J.S. Greenbaum, J.A. Dowdeswell, D.A. Young. Geophysical Investigations of Hypersaline Subglacial Water Systems in the Canadian Arctic: A Planetary Analog, AGU Fall Meeting 2017, New Orleans, USA, C22A-08.

55. D.A. Young, **C. Grima**, J.S. Greenbaum, L. Beem, M. Cavitte, E. Quartini, S.D. Kempf, J.S. Roberts, M.J. Siegert, C. Ritz, D.D. Blankenship. The subglacial roughness of Antarctica: Analogs, interpretation and implications for ice thickness uncertainities, AGU Fall Meeting 2017, New Orleans, USA, C32A-05.

54. K. Chan, **C. Grima**, D. D. Blankenship, D. A. Young, K. M. Soderlund. Mobilization of Near-Surface Brine on Europa. Europa Deep Dive 1: Ice Shell Exchange Processes, Houston, Tx, #7014.

53. F. Habbal, J. S. Greenbaum, **C. Grima**, D. A. Young, J. Roberts, T. van Ommen, and D. D. Blankenship. Improved grounding line constraints and evidence of retreat of Totten Glacier, East Antarctica, EGU General Assembly, Vienna, Austria, #EGU2017-1526.

52. J. S. Greenbaum, D. M. Schroeder, **C. Grima**, F. Habbal, C. Dow, J. Roberts, D. Gwyther, T. van Ommen, M. Siegert, and D. D. Blankenship, Morphological evidence and direct estimates of rapid melting beneath Totten Glacier Ice Shelf, East Antarctica, EGU General Assembly, Vienna, Austria, #EGU2017-1559.

51. Steinbrügge G., D. M. Schroeder, M. S. Haynes, H. Hussmann, **C. Grima**, and D. D. Blankenship, Assessing the potential for measuring Europa's tidal Love number h2 using radar sounder and topographic imager data, EGU General Assembly, Vienna, Austria, #EGU2017-9205.

50. **Grima C.**, Blankenship D.D., Paty C., Gim Y., Kurth W. S., et al. Investigating Europa's Plasma Environment from Radar Sounding, LPSC XLVIII, The Woodlands, Texas, #2816.

49. Blankenship D.D., **Grima C.**, Young D.A., SchroederD.M., Soderlund K.M., et al. Understanding Europa's Ice Shell and Subsurface Water Through Terrestrial Aanalogs for Flyby Radar Sounding, LPSC XLVIII, The Woodlands, Texas, #2888.

2016 --

48. **Grima C.**, E. Lopez Garcia, I. Koch, J.S. Greenbaum, K.M. Soderlund, D.D. Blankenship, D.A. Young, S. Fitzsimons, Surface Density, Roughness, and Brine Infiltration Observed with Airborne Radar Statistical Reconnaissance at The McMurdo Ice Shelf, Antarctica , AGU 2016, San Francisco, C53A-0701.

47. Rutishauser A., **C. Grima**, M.J. Sharp, Blankenship D.D., D.A. Young D.A. F. Cawkwell, J.A. Dowdeswell, Characterizing near-surface firn from the scattered signal component of glacier

surface reflections detected in airborne radio-echo sounding measurements, AGU 2016, San Francisco, C13C-0839.

46. Schroeder D. M., **C.Grima**, M. Haynes, J. Greenbaum, Distinguishing the signatures of ice shelf surface roughness, basal roughness, temperature and chemistry in radar sounding data. International Symposium on Interactions of Ice Sheets and Glaciers with the Ocean. La Jolla, California, USA, Abs #74A1991.

45. Poggiali V., M. Mastrogiuseppe, A. Hayes, R. Seu, S. Birch, R. Lorenz, **C. Grima**, J. Kargel, and J. Hofgartner, Liquid-filled Canyons on Titan, European Geosciences Union General Assembly, EGU2016-8065.

44. Bergeot N., Witasse O., Kofman W., **C. Grima**, Mouginot J., Peter K., Pätzold M., and V. Dehant, Study of the Total Electron Content in Mars ionosphere from MARSIS data set, European Geosciences Union General Assembly, EGU2016-3196.

43. **Grima C.**, M. Mastrogiuseppe, A. Hayes, S. Wall, B. Stiles, C. Elachi, Radar Statistical Reconnaissance with the Cassini RADAR: Roughness of Titan's Seas, LPSC, The Woodlands, Texas, #1660.

42. N. E. Putzig, G. A. Morgan, B. A. Campbell, **C. Grima**, I. B. Smith, R. J. Phillips, and M. Golombek, Radar properties of the proposed InSight landing site in Western Elysium Planitia on Mars, LPSC, The Woodlands, Texas, #1655.

2015 --

41. Castelletti D., Schroeder D.M., Hensley S., **Grima C.**, Ng G., D. Young, Yonggyu Gim, Bruzzone L., A. Moussessian, Blankenship D.D., Clutter detection using two-channel radar sounder data, Geoscience and Remote Sensing Symposium (IGARSS), 2015 IEEE International, 26-31 July 2015, Milan , p. 1052-55.

40. Poggiali V., Mastrogiuseppe M., Hayes A., Seu R., Birch S., Hofgartner J., Flamini E., Lorenz R., **Grima C.**, Kargel K., Mullen J., Liquid-Filled Chanels on Titan, AGU 2015, San francisco, P12B-02.

39. Moussessian A., Blankenship D., Plaut J., Gim Y., Schroeder D., Soderlund K., **Grima C.**, Young D., Chapin E., REASON for Europa, AGU 2015, San francisco, P13E-05.

38. Schroeder D., **Grima C.**, Haynes M., Surface and Basal Roughness in Radar Sounding Data: Obstacle and Opportunity, AGU 2015, San francisco, C13D-03.

37. Blankenship D., **Grima C.**, Young D., Schroeder D., Soderlund K., Gim Y., Plaut J., Patterson G., Moussessian A., Understanding Europa's Ice Shell and Subsurface Water through Terrestrial Analogs for Flyby Radar Sounding, AGU 2015, San francisco, P53G-02.

36. **Grima C.**, Blankenship D., Schroeder D., Moussessian A., Soderlund K., Gim Y., Plaut J., Greenbaum J., Lopez Garcia E., Campbell B., Putzig N., Patterson G. Surface Reflectometry and Ionosphere Sounding from the Radar for Europa Assessment and Sounding: Ocean to Near-surface (REASON), AGU 2015, San francisco, P11C-2110.

35. Blankenship, A. Moussessian, K.M. Soderlund, **C. Grima**, D.A. Young, D.M. Schroeder, Y. Gim, J.J. Plaut, G.W. Patterson, Revealing secret's of Europa's ice shell, hidden water and plume activity through flyby radar sounding, Astrobiology Science Confererence, Chicago, #7627.

34. **[Invited] C. Grima** Lecture at UTIG Brownbag at UTIG, How to carefully operate a radar in the space environment of Europa?.

33. Rutishauser A., **Grima C.**, Sharp M., Blankenship D. D., Young D. A., Dowdeswell J. A., The use of airborne radar reflectometry to derive near-surface snow/firn properties on Devon Ice Cap, Canadian Arctic. IASC Network Arctic Glaciology Annual Meeting, University Centre Obergurl, Austria.

32. **Grima C.** and Blankenship. D. D. Radar Statistical reconnaissance of the 2016 Insight landing sites. LPSC, The Woodlands, Texas, #1238.

31. Lalich D. Holt J. W. **Grima C.** Heterogeneity of SHARAD Reflectivity in the NPLD: Implications for the Climate Record. LPSC, The Woodlands, Texas, #2430.

2014 --

30. **Grima C.**, Rosales, BlankenshipD. D., Young D. A.. McMurdo Ice Shelf Sounding and Radar Statistical Reconnaissance at 60-MHz: Brine Infiltration Extent and Surface Properties. AGU Fall meeting, San Francisco, #C21C-0372.

29. Rutishauser A., **Grima C.**, Sharp, Blankenship, Young, Dowedeswell. The use of airborne radar reflectometry to establish snow/firn density distribution on Devon Ice Cap, Canadian Arctic: A path to understanding complex heterogeneous internal layering patterns. AGU Fall meeting, San Francisco, #C21C-0352.

28. Palmer, Dowdeswell, Christoffersen, Benham, Young, Blankenship, Richter, Ng, **Grima C.**, Habbal, Sharp. Airborne geophysical survey of ice caps in the Queen Elizabeth Islands, Arctic Canada. AGU Fall meeting, San Francisco, #C21C-0360.

27. Schroeder D.M., **Grima C.**, Blankenship D.D. Characterizing Englacial Attenuation and Grounding Zone Geometry Using Airborne Radar Sounding. AGU Fall meeting, San Francisco, #C53B-0303.

26. **[Invited] C. Grima** UTIG Seminar Leveraging Radar Sounding with Surface Reconnaissance: From Antarctic Science to Planetary Landing Sites, UTIG, Austin, TX.

25. Schroeder D. M., Burch C. B., Soderlund K. M., **Grima C.**, Blankenship D. D., Komacek T. D., Quinn T. M., Van Hecke M. A., Schmidt B. E., Patterson G. W., Plaut J. J. Icy world science and habitability in the national science olympiad for middle school students. Workshop on the habitability of Icy Worlds, Pasadena, California, USA.

24. **Grima C.**, Schroeder D. M., Blankenship D. D., Young D A. Europa landing site selection supported by ice penetrating radar. Workshop on the habitability of Icy Worlds, Pasadena, California, USA.

23. Blankenship D. D., Moussessian A., Schroeder D. M., Soderlund K., **Grima C.**, Gim Y., Plaut J. J., Schmidt B. E. Flyby sounding of europa's icy shell: radar investigations, analogs, and instruments for the europa clipper mission. Workshop on the habitability of Icy Worlds, Pasadena, California, USA.

2013 --

22. **Grima C.**, Schroeder D. M., Blankenship D. D., Young D. A.. Planetary surface roughness derived from ice penetrating radar data: Method and concept validation in Antarctica. AGU Fall Meeting, San Francisco, California, USA. (2013) Grima C., Schroeder D. M., Blankenship D. D., Young D. A.. Firn variability derived from a statistical analysis of airborne ice penetrating radar over the Thwaites Glacier catchment, West Antarctica. IGS Int. Glacio. Soc. Symp. on Radioglaciology, Lawrence, Kansas, USA.

21. **Grima C.**, Schroeder D. M., Blankenship D. D., Young D. A. Identifying Surface Characteristics with an Ice Penetrating Radar Sounder at Europa: Potential for Landing Site selection. Lun. and Planet. Sc. Congress, The Woodlands, Texas, USA.

20. Blankenship D. D., Schroeder D. M., Soderlund K. M., **Grima C.** Flyby sounding ofEurope\u2019s icy shell: radar investigations, analogs, and instruments for the Europe Clipper Mission. IGS Int. Glacio. Soc. Symp. on Radioglaciology, Lawrence, Kansas, USA.

19. Arnold E., Curra C., Karowski B., Schroeder D. M., **Grima C.**, Young D. A., Blankenship D. D. How to enhance Europa surface characterization with an ice penetrating radar? Comparative study in Antarctica. AGU Fall meeting, San Francisco.

2012 --

18. Palmer S. J., Dowdeswell J. A., Christoffersen P., Young D. A., Blankenship D. D., Stiegert M. J., Bamber, J. L., Greenbaum J. S., Ng G., **Grima C.** Airborne geophysical investigation of basal conditions at flow transitions of 16 Greenland Ice Sheet outlet glaciers. AGU meeting, San Francisco, USA.

17. **[Invited] Grima C.** Lecture at IPAG, *"Exploiter la nature statistique de l'écho radar pour la caractérisation des surfaces planétaires"*, France.

16. **[Invited] Grima C.** Lecture at LEGOS, *"Exploiter la nature statistique de l'écho radar pour la caractérisation des surfaces planétaires"*, France.

2011 --

15. Kofman W., **Grima C.**, Hérique A., Seu R., Radar reflectivity of the surface of Mars at 20 MHz from SHARAD: Cartography and quantitative analysis. AGU meeting, San Francisco, USA.

2010 --

14. **Grima C.**, Kofman W. Hérique A., Seu R., Physical parameters of the near-surface of mars derived from sharad radar reflectivity: statistical approach. 38th COSPAR scientific assembly, Bremen, Germany.

2009 --

13. Pommerol A., Mouginot J., Kofman W., Safaeinili A., Plaut J.J., **Grima C.**, Herique A., and Beck P. Martian surface radar reflectivity from MARSIS soundings, AGU meeting, San Francisco, USA.

12. Pommerol A., Kofman W., Audouard J., Kobayashi T., **Grima C.**, Mouginot J., Beck P., and Ono T., Characterization and mapping of the Lunar subsurface by the LRS/SELENE radar sounder : methods and preliminary results, Europ. Planet. Sci. Congress, Potsdam, Germany.

11. Kofman W., Mouginot J., Beck P., Pommerol A., Schmitt B., **Grima C.**, Herique A., Safaeinili A., and Plaut J.J., Mars surface materials from MARSIS radar reflectivity, AGU meeting, San Francisco, USA.

10. **Grima C.**, Kofman W., Hérique A., Beck P., and Seu R., Mapping the radar reflectivity of the Martian surface with the SHAllow RADar (SHARAD), Europ. Planet. Sci. Congress, Potsdam, Germany.

9. **Grima C.**, Costard F., Kofman W., Clifford S.M., Mouginot J., Servain A., Herique A., and Seu R., Studying the geomorphology of unusual glacial scarps on Mars, using a multi-instrumental approach, Journées de la SF2A, Besançon, France.

8. **Grima C.**, Costard F., Kofman W., Clifford S.M., Mouginot J., Servain A., Herique A., and Seu R. Large and assymetric polar scarps in Planum, Mars : Characterization and evolution. AGU meeting, San Francisco, USA.

2008 --

7. Mouginot J., Kofman W., Safaeinili A., **Grima C.**, Hérique A., Plaut J., and Picardi G. Thickness of south residual cap of Mars by MARSIS. COSPAR scientific assembly, Montreal, Canada.

6. Mouginot J., Kofman W., **Grima C.**, Safaeinili A., and Plaut J. Martian Surface Reflectivity seen by MARSIS. AGU meeting, San Francisco, USA.

5. Kofman W., **Grima C.**, Mouginot J., Hérique A., Seu R., Bicarri D., and Orosei R. 3D modeling of south polar layered deposits on Mars with SHARAD radar data. Europ. Planet. Sci. Congress, Potsdam, Germany.

4. **Grima C.**, Kofman W., Mouginot J., Servain A., Beck P., Pommerol A., Hérique A., and Seu R. Unusual ice scarps on Mars : an origin highlighted by radar sounding, elevation data, and visible imagery. Int. Symp. on Radioglacio. and its App., Madrid, Spain.

3. **Grima C.**, Kofman W., Mouginot J., Servain A., Beck P., Pommerol A., Hérique A., and Seu R. Surface and subsurface study of unusual ice scarps, southern polar cap of Mars. 37th COSPAR scientific assembly, Montreal, Canada.

2007 --

2. Kofman W., **Grima C.**, Mouginot J., Herique A., Seu R., Biccari D., Orosei R. 3D Modeling of South Poar Layered Deposits on Mars with SHARAD radar data. EuroPlanet Science Congress, Berlin, Germany, Vol.2., EPSC2007-A-00554, 2007.

2006 --

1. Gunell H., H. Nilsson, U. V. Amerstorfer, E. Carlsson, **C. Grima**, and the Aspera-3 Team. Plasma instabilities near Mars. 36th COSPAR Scientific Assembly, Beijing, China. #2338