

## Curriculum Vitae – Prof. Dr. JOACHIM SAUR

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### Education

- Ph.D., 2000, Geophysics (highest honors), University of Cologne, Germany  
Title: Plasma Interaction of Io and Europa with the Jovian Magnetosphere
- Diplom, 1995, Physics, University of Stuttgart and University of Cologne, Germany

### Professional Experience

2005 - present: Full Professor for Geophysics, University of Cologne, Germany  
2011 & 2015: Visiting Professor, Johns Hopkins University  
2003 - 2005: Senior Research Scientist, JHU/Applied Physics Laboratory, USA  
2001 - 2002: Postdoctoral Fellow, Johns Hopkins University, Baltimore, USA  
2000 - 2001: Postdoctoral Researcher, Observatoire de la Côte d'Azur, Nice, France  
1996 - 2000: Research Assistant, Univ. of Cologne, Germany  
1995 - 1995: Visitor Bartol Research Institute, and Johns Hopkins University, USA

### Research

*Interests:* Planetary sciences and space physics, including planetary moons and the search for liquid water, extrasolar planets, brown dwarfs, magnetospheres, aurorae, turbulence in space plasmas

*Interdisciplinary Interests:* Neurology (Signal transport in patients with Parkinson's disease)

*Methods:* Theory, numerical modeling, telescope and satellite observations, time-series analysis

**Identifiers:** ORCID 0000-0003-1413-1231, Web of Science ResearcherID V-6780-2019

### Awards, Honors

ERC-Advanced Grant, 2020: Searching and Characterizing Extraterrestrial Subsurface Oceans (acronym: Exo-Oceans)

Induction into Society of Scholars, Johns Hopkins University, 2017

Albertus-Magnus Teaching Award 2022, Faculty of Math.-Natural Sciences, Univ Cologne

Gauss-Lecture of German Geophysical Society, 2010 (at European Geoscience Union General Assembly)

### Professional Affiliations

Deutsche Geophysikalische Gesellschaft

American Geophysical Union

Europlanet Society

Division of Planetary Sciences of the American Astronomical Society

### Mission Participation & Science Projects

Hubble Space Telescope, 6 x PI: PI in Cycle 16 (2008), Cycle 18 (2010), Cycle 20 (2012), Cycle 24 (2016), Cycle 27 (2019), Cycle 28 (2021), Co-I in multiple Cycles (2007, 2009, 2013, 2014,

2015, 2016, 2017, 2019, 2020)

James Webb Space Telescope, Collaborator, Cycle 0, Early Release Science

ALMA, Co-I, Cycle 7, Cycle 8

Collaborator on NASA's JUNO mission (a Jupiter polar orbiter)

Co-I on Esa's JUICE mission (Jupiter Icy Moons Explorer) for RWPI and J-MAG instruments

Co-I on NASA's Europa mission for UVS-instrument and collaborator for PIMS (Particle) instrument

### **Services**

Board of Reviewing Editors for Journal *Science* (2021 –)

Initiation and introduction of new Master program *Computational Sciences* at Univ. of Cologne (start of program 2022)

Speaker of Competence Area: Quantitative Modeling of Complex Systems, within Excellence Initiative of Univ. of Cologne (2013-present)

Hubble Space Telescope, Time Allocation Committee, Cycle 14 (2005), Mid-Cycle 24 (2017), Mid-Cycle 25 (2018), External Reviewer Cycle 26 (2018), Mid-Cycle 27 (2019)

European Southern Observatory, Observing Programmes Committee, Cycles 82, 83 (2008)

ALMA, Time Allocation Committee, Cycle 1, 2, 3 (2012, 2014, 2015)

Chair Department of Geosciences, University of Cologne (2008-2009, 2013-2015).

Associated Editor, Journal of Geophysical Research, Space Physics (2008-2011)

Head of Planet Section of German Arbeitsgemeinschaft Extraterrestr. Forschung (2009-2017)

Jury Member, Francqui Foundation, 2015

### **Host/Organization of Conferences and Meetings**

Workshop on the Jupiter system, University of Cologne, July, 6-7 2000;

Conference: Magnetospheres of the Outer Planets, University of Cologne, July, 2009;

Annual Meeting of German Geophysical Society and Arbeitskreis Extraterrestr. Forschung, Univ. Cologne, February, 2011

Conference: Numerical Techniques in MHD Simulations, Cologne, August, 2017

### **Talks for Public Outreach**

Regular talks at Planetariums, Girls Days, Kinderuniversitaet, etc.

**Press coverage of publications in:** New York Times, BBC, Le Monde, Washington Post, USA Today, National Public Radio, Spiegel Online, Sueddeutsche Zeitung, Frankfurter Allgemeine, Zeit, Koelner Stadtanzeiger, etc.

# Publications

155 peer-reviewed publications, including 8 publications in Nature & Science, 2 in Nature Astronomy, and 8 Book and Review Chapters (as first author), H-Index: 41 (after Web of Science) and 50 (after Google Scholar)

## Peer-Reviewed Publications & Book Chapters

### 2023

1. Winkens J., **J. Saur**, Detectability of Local Water Reservoirs in Europa's Surface Layer under Consideration of Coupled Induction, 128, *J. Geophys. Res. (Planets)*, 2023
2. Schlegel, S. and **Saur, J.**, The Structure of the warped Io Plasma Torus constrained by the Io Footprint, 128, *J. Geophys. Res. (Space Physics)*, doi.org/10.1029/2023JA031511, 2023
3. Roberts, James H.,McKinnon, William B., Elder, Catherine M., Tobie, Gabriel, Biersteker, John B.,Young, Duncan,Park, Ryan S., Steinbrügge, Gregor, Nimmo, Francis, Howell, Samuel M., Castillo-Rogez, Julie C., Cable, Morgan L., Abrahams, Jacob N., Bland, Michael T., Chivers, Chase, Cochran, Corey J., Dombard, Andrew J., Ernst, Carolyn, Genova, Antonio, Gerekos, Christopher, Glein, Christopher, Harris, Camilla D., Hay, Hamish C. F. C., Hayne, Paul O., Hedman, Matthew, Hussmann, Hauke, Jia, Xianzhe, Khurana, Krishan, Kiefer, Walter S., Kirk, Randolph, Kivelson, Margaret, Lawrence, Justin, Leonard, Erin J., Lunine, Jonathan I., Mazarico, Erwan, McCord, Thomas B., McEwen, Alfred, Paty, Carol, Quick, Lynnae C., Raymond, Carol A., Retherford, Kurt D., Roth, Lorenz, Rymer, Abigail, **Saur, J.**, Scanlan, Kirk, Schroeder, Dustin M., Senske, David A., Shao, Wencheng, Soderlund, Krista, Spiers, Elizabeth, Styczinski, Marshall J., Tortora, Paolo, Vance, Steven D., Villarreal, Michaela N., Weiss, Benjamin P., Westlake, Joseph H., Withers, Paul, Wolfenbarger, Natalie, Buratti, Bonnie, Korth, Haje, Pappalardo, Robert T., The Interior Thematic Working Group, Exploring the Interior of Europa with the Europa Clipper, *Space Science Rev.*, 219, 10.1007/s11214-023-00990-y, 2023
4. de Pater, Imke, Lellouch, Emmanuel, Strobel, Darrell F., de Kleer, Katherine, Fouchet, Thierry, Wong, Michael H., Holler, Bryan J., Stansberry, John, Fry, Patrick M., Brown, Michael E., Bockelée-Morvan, Dominique, Trumbo, Samantha K., Fletcher, L. N., Hedman, Matthew M., Molter, Edward M., Showalter, Mark, Tiscareno, Matthew S., Cazaux, Stéphanie and Hueso, Ricardo, Luszcz-Cook, Statia, Melin, Henrik, Moeckel, Chris, Mura, Alessandro, Orton, Glenn, Roth, Lorenz, **Saur, J.**, Tosi, Federico, An Energetic Eruption With Associated SO 1.707 Micron Emissions at Io's Kanehekili Fluctus and a Brightening Event at Loki Patera Observed by JWST, *J. Geophys. R. (Planets)*, 128, 10.1029/2023JE007872, 2023
5. Roth, Lorenz and Smith, H. Todd, Yoshioka, Kazuo, Becker, Tracy M., Blöcker, Aljona, Cunningham, Nathaniel J., Ivchenko, Nickolay, Retherford, Kurt D., **Saur, J.** and Velez, Michael and Tsuchiya, Fuminori, Constraints on Europa's Water Group Torus from HST/COS Observations, *Planetary Science J.*, 4, 10.3847/PSJ/acddd, 2023

6. Sulaiman, A. H. and Szalay, J. R. and Clark, G. and Allegrini, F. and Bagenal, F. and Brennan, M. J. and Connerney, J. E. P. and Hue, V. and Kurth, W. S. and Lysak, R. L. and Nichols, J. D. and **Saur, J.** and Bolton, S. J., Poynting Fluxes, Field-Aligned Current Densities, and the Efficiency of the Io-Jupiter Electrodynamic Interaction, *Geophys. Res. Lett.*, 50, 10.1029/2023GL103456, 2023.
7. Elekes F., **Saur J.**, Space environment and magnetospheric Poynting fluxes of the exoplanet  $\tau$  Boötis b, *Astron. Astrophys.*, doi.org/10.1051/0004-6361/202244947, forthcoming, 2023
8. Roth L., Marchesini G., Becker T.M., Hoeijmakers H.J., Molyneux P.M., Retherford K.D., **Saur J.**, Mogan S.R.C., Szalay J.R., Probing Ganymede’s atmosphere with HST Lyman- $\alpha$  images in transit of Jupiter, *Planetary Science J.*, 4, 1, doi:10.3847/PSJ/acaf7f, 2023
9. Clark G., Szalay J.R., Sulaiman A.H., **Saur J.**, Kollmann P., Mauk B., Paranicas C., Hue V., Greathouse T., Allegrini F., Glocher A., Garica-Sage K., Bolton S., Energetic proton acceleration by EMIC waves in Io’s footprint tail, *Front. Astron. Space Sci. Sec. Planetary Science*, doi: 10.3389/fspas.2023.1016345, in press, 2023

## 2022

10. **Saur J.** et al., Alternating north-south brightness ratio of Ganymede’s auroral ovals: Hubble Space Telescope observations around the Juno PJ34 flyby, *Geophys. Res. Lett.*, doi.org/10.1029/2022GL098600, 2022
11. Duling S., **Saur J.**, Clark G., Allegrini F., Greathouse T., Gladstone R., Kurth W., Connerney J.E.P., Bagenal F., Sulaiman A.H., Ganymede MHD Model: Magnetospheric Context for Junos PJ34 Flyby *Geophys. Res. Lett.*, <https://doi.org/10.1029/2022GL101688>, 2022
12. Clark, G., Kollmann P., Mauk B.H., Paranicas C., Haggerty D., Rymer A., Smith H. T., Gladstone R., Szalay J. R., **Saur J.**, Allegrini F., Duling S., Ebert R. W., Kurth W. S., Kurth, Greathouse T. K., Li W., Bagenal F., Connerney J. E. P., Bolton S., Sulaiman A. H. Sulaiman, Hansen C. J., Turner D. L., Energetic charged particle observations during Juno’s close flyby of Ganymede *Geophys. Res. Lett.*, 49, e2022GL098572. <https://doi.org/10.1029/2022GL098572>, 2022
13. Greathouse T.K., Gladstone G R., Molyneux P.M., Versteeg M.H., Hue V., Kammer J.A., Davis M.W., Bolton S. J., Glies R.S., Connerney J.E.P., Gerard J.-C., Grodent D.C., Bonfond B., **Saur J.**, Duling S. UVS observations of Ganymede’s aurora during Juno orbits 34 and 35. *Geophys. Res. Lett.*, 49, <https://doi.org/10.1029/2022GL099794>, 2022
14. Sulaiman A.H., Mauk, B.H., Szalay J.R., Allegrini F., Clark G., Gladstone G.R., Kotsiaros S., Ebert R.W., Lysak R L., Kurth W.S., Elliot S.S., Masters A., Bagenal F., Bonfond B. , Connerney J.E.P., Gershman D.J., Hospodarsky G.B., Hue V., Santoliik O., **Saur J.**, Bolton S.J., Jupiter’s low-altitude auroral zones: Fields, particles, plasma waves, and density depletions, *J. Geophys. Res. (Space Physics)*, 127, <https://doi.org/10.1029/2022JA030334>, 2022
15. Janser S., **Saur J.**, Clark G., Sulaiman A. H., Szalay, J. R., Properties of turbulent Alfvénic fluctuations and wave-particle interaction associated with Io’s footprint tail *J. Geophys. Res. (Space Physics)*, 127, <https://doi.org/10.1029/2022JA030675>, 2022

16. Fischer C. and **J. Saur**, Star-Planet Interaction: Wave Structures and Wing-Wing Interaction, *Astron. Astrophys.*, 668, doi.org/10.1051/0004-6361/202243346A10, 2022
17. Grayver A., Bower D.J., **Saur J.**, Dorn C., Morris B.M., Interior Heating of Rocky Exoplanets from Stellar Flares with Application to TRAPPIST-1, *Astrophys. J. Lett.*, 941:L7 (13pp), 2022
18. Cervantes, S., **J. Saur**, Constraining Europa’s subsolar atmosphere with a joint analysis of HST spectral images and Galileo magnetic field data, *J. Geophys. Res. (Space Physics)*, 10.1029/2022JA030472, 2022
19. Salveter A.P., **J. Saur**, Clark G., Mauk B.H., Jovian auroral electron precipitation budget - A Statistical Analysis of Diffuse, Mono-energetic, and Broadband Auroral electron distributions, *J. Geophys. Res. (Space Physics)*, 10.1029/2021JA030224, 2022
20. Schlegel S., **J. Saur**, Alternating emission features in Ios footprint tail: Magnetohydrodynamical simulations of possible causes, *J. Geophys. Res. (Space Physics)*, 10.1029/2021JA030243, 2022
21. Allegrini F., F. Bagenal, R. W. Ebert, P. Louarn, D. J. McComas, J. R. Szalay, P. Valek, R. Wilson, S. J. Bolton, J. E. P. Connerney, G. Clark, S. Duling, W. S. Kurth, B. Mauk, **Saur**, J. H. Waite, Plasma observations during the June 7, 2021 Ganymede flyby from the Jovian Auroral Distributions Experiment (JADE) on Juno, *J. Geophys. Res. Lett.*, doi.org/10.1029/2022GL098682, 2022
22. W. S. Kurth, A. H. Sulaiman, G. B. Hospodarsky, J.D. Menietti B. H. Mauk, G. Clark, F. Allegrini, P. Valek, J. E. P. Connerney, J. H. Waite, S. J. Bolton, M. Imai, O. Santolik, W. Li, S. Duling, **J. Saur**, C. Louis, Juno Plasma Wave Observations at Ganymede, *J. Geophys. Res. Lett.*, doi.org/10.1029/2022GL098591, 2022
23. Marzok, A., Schlegel, S., **Saur, J.**, Roth, L., Grodent, D., Strobel, D. F., and Retherford, K. D., Mapping the brightness of Ganymede’s ultraviolet aurora using Hubble Space Telescope observations *J. Geophys. Res. (Planets)*, 127, doi.org/10.1029/2022JE007256, 2022
24. Masatoshi Y., De Keyser J., Parks G., Oyama S., Wurz P., Abe T., Beth A., Daglis I.A., Dandouras I., Dunlop M., Henri P., Ivchenko N., Kallio E., Kucharek H., Liu Y.C.-M., Mann I., Marghitsu O., Nicolaou G., Rong Z., Sakanoi T., **Saur, J.**, Shimoyama M., Taguchi S., Tian F., Tsuda, T., Tsurutani, B., Turner D., Ulich T.; Yau A., Yoshikawa I., Plasma-neutral gas interactions in various space environments: Assessment beyond simplified approximations as a Voyage 2050 theme, *Experimental Astronomy*, doi:10.1007/s10686-022-09846-9, 2022

## 2021

25. **Saur J.**, Willmes C., Fischer C., Wennmacher A., Roth L., Youngblood A, Strobel D.F., Reiners A., Brown dwarfs as ideal candidates for detecting UV aurora outside the Solar System: Hubble Space Telescope observations of 2MASS J1237+6526, *Astron. Astrophysics*, 655, doi.org/10.1051/0004-6361/202040230, 2021
26. **Saur J**, Turbulence in the Magnetospheres of the Outer Planets, *Frontiers in Astromoy and Space Sciences*, 8:624602. doi: 10.3389/fspas.2021.624602, 2021

27. **Saur J**, Overview Moon-magnetosphere Interactions, *Space Physics and Aeronomy Collection Volume 2: Magnetospheres in the Solar System, Geophysical Monograph 259*, ed. R. Maggiolo, N. André, H. Hasegawa, D. Welling, American Geophysical Union. Published by John Wiley and Sons, Inc. DOI: 10.1002/9781119815624.ch36, 2021
28. Roth L., Ivchenko N., Gladstone G.R., **Saur J.** et al., A sublimated water atmosphere on Ganymede detected from Hubble Space Telescope observations, *Nature Astronomy*, DOI:10.1038/s41550-021-01426-9, 2021
29. Gaël et al., Enceladus as a potential oasis for life: Science goals and investigations for future explorations, *Experimental Astronomy*, doi:10.1007/s10686-021-09808-7, 2021
30. Sulaiman A.H. et al., Enceladus and Titan: emerging worlds of the Solar System, *Experimental Astronomy*, doi:10.1007/s10686-021-09810-z, 2021
31. Allegrini F., Kurth W.S., Elliott S.S., **Saur J.** et al., Electron partial density and temperature over Jupiters main auroral emission using Juno observations, *J. Geophys. Res. (Space Physics)*, doi.org/10.1029/2021JA029426, 2021
32. Verscharen, D. et al., A Case Study for Electron-Astrophysics, *Experimental Astronomy*, doi:10.1007/s10686-021-09761-5, 2021

## 2020

33. Clark, G.; Mauk, B. H.; Kollmann, P.; Szalay, J. R.; Sulaiman, A. H.; Gershman, D. J.; **Saur, J.**; Janser, S.; Garcia-Sage, K.; Greathouse, T.; Paranicas, C.; Allegrini, F.; Bagenal, F.; Bolton, S. J.; Connerney, J. E. P.; Ebert, R. W.; Hospodarsky, G.; Haggerty, D.; Hue, V.; Imai, M., et al., Energetic Proton Acceleration Associated With Io's Footprint Tail, *J. Geophys. Res. Lett.*, DOI: 10.1029/2020GL090839, 2020
34. Blanc, M. et al., Joint Europa Mission (JEM): a multi-scale study of Europa to characterize its habitability and search for extant life, Joint Europa Mission (JEM): a multi-scale study of Europa to characterize its habitability and search for extant life, *Planetary and Space Science*, Volume 193, 104960, DOI: 10.1016/j.pss.2020.104960, 2020
35. Szalay, J. R.; Allegrini, F.; Bagenal, F.; Bolton, S. J.; Bonfond, B.; Clark, G.; Connerney, J. E. P.; Ebert, R. W.; Hue, V.; Giles, R. S.; Gladstone, G. R.; Greathouse, T.; Hospodarsky, G. B.; McComas, D. J.; **Saur, J.**, Sulaiman, A.H., Wilson R.J., A new framework to explain changes in Ios footprint tail electron fluxes, *J. Geophys. Res. Lett.*, doi.org/10.1029/2020GL089267, in press, 2020
36. Sulaiman, A.H., G. B. Hospodarsky, S. S. Elliott, W. S. Kurth, D. A. Gurnett, M. Imai, F. Allegrini, B. Bonfond, G. Clark, J. E. P. Connerney, R. W. Ebert, D. J. Gershman, V. Hue, S. Janser, S. Kotsiaros, C. Paranicas, O. Santolik, **J. Saur**, J. R. Szalay, S. J. Bolton, Waveparticle interactions associated with Ios auroral footprint: Evidence of Alfvén, ion cyclotron, and whistler modes, *J. Geophys. Res. Lett.*, doi.org/10.1029/2020GL088432, 2020
37. Allegrini, F.; Gladstone, G. R.; Hue, V.; Clark, G.; Szalay, J. R.; Kurth, W. S.; Bagenal, F.; Bolton, S.; Connerney, J. E. P.; Ebert, R. W.; Greathouse, T. K.; Hospodarsky, G. B.; Imai, M.; Louarn, P.; Mauk, B. H.; McComas, D. J.; **Saur, J.**; Sulaiman, A. H.; Valek, P.

- W.; Wilson, R. J., First Report of Electron Measurements During a Europa Footprint Tail Crossing by Juno, 47, *J. Geophys. Res. (Space Physics)*, doi.org/10.1029/2020GL089732, 2020
38. Soderlund K.M., Kalousova K., Buffo J. J., Glein C.R., Goodman, J.C. Mitri G., Patterson G., Postberg F., Rovira-Navarro M., Rueckriemen T., **Saur J.**, et al., Ice-ocean exchange processes in outer solar system satellites, *Space Sci. Rev.*, 216, 216:80, doi.org/10.1007/s11214-020-00706-6, 2020
39. Roth L., Boissier J., Moullet A., Snchez-Monge A., de Kleere K., Yoneda M., Hikida R., Kita H., Tsuchiya F., Bloecker A., Gladstone R., Grodent D., Ivchenko N., Lellouch E., Retherford. K., **Saur J.**, et al., An attempt to detect transient changes in Io's SO<sub>2</sub> and NaCl atmosphere, *Icarus*, 350, doi.org/10.1016/j.icarus.2020.113925, 2020
40. Allegrini, F.; Mauk, B.; Clark, G.; Gladstone, G. R.; Hue, V.; Kurth, W. S.; Bagenal, F.; Bolton, S.; Bonfond, B.; Connerney, J. E. P.; Ebert, R. W.; Greathouse, T.; Imai, M.; Levin, S.; Louarn, P.; McComas, D. J.; **Saur J.**, et al., Energy flux and characteristic energy of electrons over Jupiter's main auroral emission *J. Geophys. Res. (Space Physics)*, doi.org/10.1029/2019JA027693, 2020
41. Giono G., Roth L., Ivchenko N., **Saur J.**, Retherford K., Schegel. S., et al., An analysis of the statistics and systematics of limb anomaly detections in HST/STIS transit images of Europa, *Astrophys. J.*, 159, doi.org/10.3847/1538-3881/ab7454, 2020
42. Szalay, J. R.; Allegrini, F.; Bagenal, F.; Bolton, S. J.; Bonfond, B.; Clark, G.; Connerney, J. E. P.; Ebert, R. W.; Gershman, D. J.; Giles, R. S.; Gladstone, G. R.; Greathouse, T.; Hospodarsky, G. B.; Imai, M.; Kurth, W. S.; Kotsiaros, S.; Louarn, P.; McComas, D. J.; **Saur, J.**, et al., Alfvénic Acceleration Sustains Ganymede's Footprint Tail Aurora, *J. Geophys. Res. Lett.*, 47, e2019GL086527, doi.org/10.1029/2019GL086527, 2020
43. Journaux, B., Kalousov, K.; Sotin, C.; Tobie, G.; Vance, S.; **Saur, J.**; Bollengier, O.; Noack, L.; Rueckriemen-Bez, T.; Van Hoolst, T.; Soderlund, K.; Brown, M Large Ocean Worlds with High-Pressure Ices, *Space Sci. Rev.*, 216: 7., doi.org/10.1007/s11214-019-0633-7, 2020
44. Taubner, R.; Olsson-Francis, K.; Vance, S.; Ramkissoon, N.; Postberg, F.; de Vera, J.; Antunes, A.; Camprubi Casas, E.; Sekine, Y.; Noack, L.; Barge, L.; Goodman, J.; Jebbar, M.; Journaux, B.; Karatekin, O.; Klenner, F.; Rabbow, E.; Rettberg, P.; Rueckriemen-Bez, T.; **Saur, J.**, et al. Experimental and Simulation Efforts in the Astrobiological Exploration of Exooceans, *Space Sci. Rev.*, 216: 9. <https://doi.org/10.1007/s11214-020-0635-5>, 2020
45. Szalay, J. R.; Bagenal, F.; Allegrini, F.; Bonfond, B.; Clark, G.; Connerney, J. E. P.; Crary, F.; Ebert, R. W.; Ergun, R. E.; Gershman, D. J.; Hinton, P. C.; Imai, M.; Janser, S.; McComas, D. J.; Paranicas, C.; **Saur, J.**, et al. Proton Acceleration by Io's Alfvénic Interaction, *J. Geophys. Res. (Space Physics)*, 125, doi:10.1029/2019JA027314R, 2020

## 2019

46. Kotsiaros, S.; Connerney, J.; Clark, G.; Allegrini, F.; Gladstone, R.; Kurth, W.; Mauk, B.; **Saur, J.**, et al., Birkeland currents in Jupiter's magnetosphere observed by the polar orbiting Juno spacecraft, *Nature Astronomy*, 10.1038/s41550-019-0819-7, 2019

47. Hue V., Greathouse T.K., Bonfond B., **Saur J.**, Gladstone R., Roth L., et al., Juno-UVS Observation of the Io Footprint During Solar Eclipse, *J. Geophys. Res. (Space Physics)*, 124, 10.1029/2018JA026431 (2019)
48. Fischer C. and **J. Saur**, Time-variable electromagnetic star-planet interaction: The Trappist-1 system as an exemplary case, *Astrophys. J.*, doi:10.3847/1538-4357/aafaf2, 872:113 (17pp), 2019

## 2018

49. **Saur J.**, S. Janser, A. Schreiner, G.C. Clark, B.H. Mauk, P. Kollmann, R.W. Ebert, F. Allegrini, J.R. Szalay, S. Kotsiaros, Wave-particle interaction of Alfvén waves in Jupiter’s magnetosphere: Auroral and magnetospheric particle acceleration, *J. Geophys. Res. (Space Physics)*, doi: 10.1029/2018ja025948, 123, 9560, 2018
50. **Saur J.**, C. Fischer, A. Wennmacher, P.D. Feldman, L. Roth, D.F. Strobel, A. Reiners, The UV Spectrum of the Ultracool Dwarf LSR J1835+3259 Observed with the Hubble Space Telescope, *Astrophys. J.*, 859:74, 11pp, 2018
51. **Saur J.**, Electromagnetic Coupling in Star-Planet Systems, *Handbook of Exoplanets*, Springer, doi:10.1007/978-3-319-55333-7\_27, id.27, 2018
52. **Saur J.**, E. Chané, O. Hartkorn, Modeling Magnetospheric Fields in the Jupiter System, *Magnetic Fields in the Solar System*, Springer, Edited by H. Lühr et al., vol. 448, pp. 153-182, 2018
53. Mura, A.; Adriani, A.; Connerney, J. E. P.; Bolton, S.; Altieri, F.; Bagenal, F.; Bonfond, B.; Dinelli, B. M.; Grard, J. -C.; Greathouse, T.; Grodent, D.; Levin, S.; Mauk, B.; Moriconi, M. L.; **J. Saur** et al., Juno observations of spot structures and a split tail in Io-induced aurorae on Jupiter, **Science**, 10.1126/science.aat1450, 361, 774, 2018
54. Blöcker, A., **J. Saur**, L. Roth, D.F. Strobel, MHD Modeling of the Plasma Interaction with Io’s Asymmetric Atmosphere, *J. Geophys. Res. (Space Physics)*, DOI: 10.1002/2018JA025747, 123, 9286, 2018
55. Szalay, J. R.; Bonfond, B.; Allegrini, F.; Bagenal, F.; Bolton, S.; Clark, G.; Connerney, J. E. P.; Ebert, R. W.; Ergun, R. E.; Gladstone, G. R.; Grodent, D.; Hospodarsky, G. B.; Hue, V.; Kurth, W. S.; Kotsiaros, S.; Levin, S. M.; Louarn, P.; Mauk, B.; McComas, D. J.; **Saur, J.**, et al. In-Situ Observations Connected to the Io Footprint Tail Aurora, *J. Geophys. Res. (Planets)*, doi:10.1029/2018JE005752R, 2018
56. Bohm M., Winters A.R., Gassner G.J., Derigs D., Hindenlang F., **J. Saur**, An entropy stable nodal discontinuous Galerkin method for the resistive MHD equations. Part I: Theory and Numerical Verification, *J. Comp. Phys.*, in press
57. Clark G. et al., Precipitating Electron Energy Flux and Characteristic Energies in Jupiter’s Main Auroral Region as Measured by Juno/JEDI, *Journal of Geophysical Research: Space Physics*, doi:10.1029/2018JA025639, 123, 75547567, 2018
58. Becker T.M., K.D. Retherford, L. Roth, A.R. Hendrix, M.A. McGrath, **J. Saur**, The Far-UV Albedo of Europa from HST Observations, *J. Geophys. Res.*, 122, doi:10.1029/2018JE005570, 2018



59. Grodent D., et al., Jupiter's Aurora Observed with HST during Juno Orbits 3 to 7 *J. Geophys. Res.* , doi.org/10.1002/2017JA025046, 2018
60. Plainaki C., et al., Towards a global unified model of Europas tenuous atmosphere. *Space Science Reviews*, 214(1), 40, doi:10.1007/s11214-018-0469-6, 2018

## 2017

61. Chané E., **J. Saur**, J. Raeder J., F.M. Neubauer, K.M. Maynard, S. Poedts, The magnetosphere of the Earth under sub-Alfvénic solar wind conditions as observed on the 24th and 25th of May 2002, *in Down-Dusk-Asymmetries in Planetary Plasma Environments, AGU Monograph Series*, American Geophysical Union, 3-13, 2017
62. von Papen M., H. Dafsari, E. Florin, F. Gerrick, L. Timmermann, **J. Saur**, Phase-coherence classification: a new wavelet-based method to separate local field potentials into local (in)coherent and volume-conducted components, *J. Neuroscience Methods*, 291C, 198-212, DOI: 10.1016/j.jneumeth.2017.08.021, 2017
63. Hartkorn O. and **J. Saur**, Induction signals from Callisto's ionosphere and their implications on a possible subsurface ocean. *J. Geophys. Res.*, 122, doi:10.1002/2017JA024269, 2017
64. Ebert R.W. et al., Spatial Distribution and Properties of 0.1 - 100 keV Electrons in Jupiter's Polar Aurora Region, *Geophys. Res. Lett.*, 44, doi: 10.1002/2017GL075106, 2017
65. Clark G. et al., Energetic particle signatures of magnetic field-aligned potentials over Jupiter's polar regions, *Geophys. Res. Lett.*, 44, doi:10.1002/2017GL074366, 2017
66. B. Bonfond, **J. Saur**, D. Grodent, S.V. Badman, D. Bisikalo, V. Shematovhich, J.-C. Gérard, A. Radiotti, The tails of the satellite auroral footprints at Jupiter, *J. Geophys. Res.*, 122, doi:10.1002/2017JA024370, 2017
67. J. Alday, L. Roth, N. Ivchenko, K.D. Retherford, T.M. Becker, P. Molyneux, **J. Saur**, New constraints on Ganymede's hydrogen corona: Analysis of Lyman- $\alpha$  emissions observed by HST/STIS between 1998 and 2014 *Planet. Space Science*, 148, 35-44, doi:10.1016/j.pss.2017.10.006, 2017
68. F. Gerick, **J. Saur**, M. von Papen, The uncertainty of Local Background Magnetic Field Orientation in Anisotropic Plasma Turbulence, *Astrophys. J.*, 843, 5, doi:10.3847/1538-4357/aa767c, 2017
69. A. Schreiner and **J. Saur**, A Model for Dissipation of Solar Wind Magnetic Turbulence by Kinetic Alfvén Waves at Electron Scales: Comparison with Observations, *Astrophys. J.*, 835, 133, doi:10.3847/1538-4357/835/2/133, 2017
70. Roth L., **J. Saur**, K.D. Retherford, A. Blöcker, D.F. Strobel, P.D. Feldman, Constraints on Io's interior from auroral spot oscillations, *J. Geophys. Res.*, 122, 1903-1927, doi: 10.1002/2016JA023220, 2017
71. B. Bonfond, D. Grodent, S.V. Badman, **J. Saur**, J.-C. Gérard, A. Radiotti, Similarity of the Jovian satellite footprints: Spots multiplicity and dynamics, *Icarus*, 292, 208-217, 2017

72. E. Chané, **J. Saur**, R. Keppens, and S. Poedts, How is the Jovian Main Auroral Emission Affected by the Solar Wind?, *J. Geophys. Res. Space Physics*, 122, 1960-1978, doi:10.1002/2016JA023318, 2017
73. Musacchio F., **J. Saur**, L. Roth, K.D. Retherford, M.A McGrath, P.D Feldman, and D.F. Strobel, Morphology of Ganymede's FUV auroral ovals, *J. Geophys. Res.*, 122, 2855-2876, doi:10.1002/2016JA023220, 2017
74. Hartkorn O., **J. Saur**, D.F. Strobel, Structure and Density of Callistos Atmosphere from a Fluid-Kinetic Model of Its Ionosphere and Comparison with Hubble Space Telescope and Galileo Observations, *Icarus*, 282, 237-259, DOI: 10.1016/j.icarus.2016.09.020, 2017

### 2016

75. Blöcker, A., **J. Saur**, L. Roth, Europa's Plasma Interaction with an Inhomogeneous Atmosphere: Development of Alfvén Winglets within the Alfvén wings, *J. Geophys. Res. (Space Physics)*, 121, 9794-9829, DOI: 10.1002/2016JA022479, 2016
76. von Papen M. and **J. Saur**, Longitudinal and local time asymmetry of magnetospheric turbulence in Saturn's plasma sheet, *J. Geophys. Res. (Space Physics)*, 121, DOI: 10.1002/2016JA022427, 2016
77. Roth L., **J. Saur**, K.D. Retherford, D.F. Strobel, P.D. Feldman, M.A. McGrath, J.R. Spencer, A. Bloecker, N. Ivchenko, Europa's far ultraviolet oxygen aurora from a comprehensive set of HST observations, *J. Geophys. Res. (Space Physics)*, 121, doi: 10.1002/2015JA022073, 2016
78. Roth L., N. Ivchenko, K.D. Retherford, N.J. Cunningham, P.D. Feldman, **J. Saur**, J.R. Spencer, D.F. Strobel, Constraints on an exosphere at Ceres from Hubble Space Telescope observations, *Geophys. Res. Lett.*, 43, doi:10.1002/2015GL067451, 2016

### 2015

79. Chané E., Raeder J., **J. Saur**, Neubauer F.M., Maynard K.M., Poedts S., Simulations of the Earth's Magnetosphere Embedded in sub-Alfvénic Solar Wind on 24 and 25 May 2002, *J. Geophys. Res. (Space Physics)*, 120, doi:10.1002/2015JA021515, 2015
80. von Papen M., **J. Saur**, Forward Modeling of Reduced Power Spectra from Three-dimensional k-space, *Astr. Phys. J.*, 806, 11, 116, 2015
81. **Saur J.**, et al., The Search for a Subsurface Ocean in Ganymede with Hubble Space Telescope Observations of its Auroral Ovals *J. Geophys. Res.*, 120, 1715-1737 , 2015

### 2014

82. Roth L., K. D. Retherford, **J. Saur**, D. F. Strobel, P. D. Feldman, M. A. McGrath, F. Nimmo, Orbital apocenter is not a sufficient condition for HST/STIS detection of Europas water vapor aurora, *Proc. Nat. Acad. Sciences*, 111 (48) E5123-E5132, doi:10.1073/pnas.1416671111, 2014

83. Roth L.\*, **J. Saur**\*, K. D. Retherford, D. F. Strobel, P. D. Feldman, M. A. McGrath, F. Nimmo, Transient water vapor at Europa's south pole, **Science**, 343(6167), 171-174, 2014 (\*: equal contribution)
84. von Papen M., **J. Saur**, O. Alexandrova, Turbulent magnetic field fluctuations in Saturn's magnetosphere, *J. Geophys. Res. (Space Physics)*, 119, 2014
85. Duling, S., **J. Saur**, Wicht J., Consistent boundary conditions at nonconducting surfaces of planetary bodies: Applications in a new Ganymede MHD model, *J. Geophys. Res. (Space Physics)*, 119, 4412-4440, 2014
86. Kriegel, H., S. Simon, P. Meier, U. Motschmann, **J. Saur**, A. Wennmacher, D.F. Strobel, M.K. Dougherty, Ion densities and magnetic signatures of dust pickup at Enceladus, *J. Geophys. Res. (Space Physics)*, 119, 2740-2774, 2014
87. Simon, S., **J. Saur**, S. C. Treeck, H. Kriegel, M.K. Dougherty, Discontinuities in the magnetic field near Enceladus, *Geophys. Res. Let.*, 41, 3359-3366, 2014
88. L. Roth, **J. Saur**, K. D. Retherford, P. D. Feldman, D. F. Strobel A phenomenological model of Io's UV aurora based on HST/STIS observations, *Icarus*, (228), 386-406, 2014

### 2013

89. Plainaki, C., A. Milillo, A. Mura, **J. Saur**, S. Orsini, S. Massetti, Exospheric O<sub>2</sub> densities at Europa during different orbital phases, *Planet. Space Science*, 88, 42-52, 2013
90. Bonfond B., S. Hess, J.-C. Gérard, D. Grodent, A. Radioti, V. Chantry, **J. Saur**, S. Jacobsen, J.T. Clarke, Evolution of the Io footprint brightness I: Far-UV observations, *Planet. Space Science*, 88, 64-75, 2013
91. M. McGrath, X. Jia, K. Retherford, P.D. Feldman, D. F. Strobel, **J. Saur**, Aurora on Ganymede, *J. Geophys. Res. (Space Physics)*, 118(5), 2043-2054, 2013
92. Simon S., H. Kriegel, **J. Saur**, A. Wennmacher, Energetic aspects of Enceladus' magnetospheric interaction, *J. Geophys. Res. (Space Physics)*, 118(6), 3430-3445, 2013
93. **Saur J.**, T. Grambusch, S. Duling, F. M. Neubauer, S. Simon, Magnetic energy fluxes in sub-Alfvénic planet star and moon planet interactions, *Astron. Astrophys.*, 552, 20, 2013
94. Chané E., **J. Saur**, S. Poedts, Modeling Jupiter's magnetosphere: Influence of the internal sources, *J. Geophys. Res. (Space Physics)*, 118(5), 2157-2172, 2013
95. Simon S., S.C. Treeck, A. Wennmacher, **J. Saur**, F.M. Neubauer, C.L. Bertucci, M.K. Dougherty, Structure of Titan's induced magnetosphere under varying background, magnetic field conditions: Survey of Cassini magnetometer data from flybys TA-T85, *J. Geophys. Res. (Space Physics)*, 118(4), 1679-1699, 2013

### 2012

96. Simon S., H. Kriegel, **J. Saur**, A. Wennmacher, F.M. Neubauer, E. Roussos, U. Motschmann, M.K. Dougherty, Analysis of Cassini magnetic field observations over the poles of Rhea, *J. Geophys. Res. (Space Physics)*, 117(A7), JA017747, 2012

97. Simon S., H. Kriegel, **J. Saur**, A. Wennmacher, F.M. Neubauer, E. Roussos, U. Motschmann, M.K. Dougherty, Analysis of Cassini magnetic field observations over the poles of Rhea, *J. Geophys. Res. (Space Physics)*, 117(A7), JA017747, 2012
98. Chané E., **J. Saur**, F.M. Neubauer, J. Raeder, S. Poedts, Observational evidence of Alfvén wings at the Earth, *J. Geophys. Res. (Space Physics)*, 117(A9), JA017628, 2012
99. Christophe B., et al., OSS (Outer Solar System): a fundamental and planetary physics mission to Neptune, Triton and the Kuiper Belt, *Experimental Astronomy*, 34(2), 203-242, 2012
100. Arridge C.S., et al., Uranus Pathfinder: exploring the origins and evolution of Ice Giant planets. *Experimental Astronomy*, 33(2), 753-791 2012

### 2011

101. Seufert M., **J. Saur** und F.M. Neubauer Multi-frequency electromagnetic sounding of the Galilean moons *Icarus*, 214(2), 477-494, 2011
102. **Saur J.**, D. Paul, L. Roth, F. Nimmo, D.F. Strobel, F. Darell, K.D. Retherford, M.A. McGrath, N. Schilling, J.-C. Grard, D. Grodent Hubble Space Telescope/Advanced Camera for Surveys Observations of Europa's Atmospheric Ultraviolet Emission at Eastern Elongation. *Astrophys. J.*, 738(2), 13pp., 2011
103. Kriegel H., S. Simon, U. Motschmann, **J. Saur**, F.M. Neubauer, A.M. Persoon, M.K. Dougherty, D.A. Gurnett, Influence of negatively charged plume grains on the structure of Enceladus' Alfvén wings: Hybrid simulations versus Cassini Magnetometer data. *J. Geophys. Res. (Space Physics)*, 116(A10223), 2011
104. Roth L., **J. Saur**, K.D. Retherford, D.F. Strobel, J.R. Spencer Simulation of Io's auroral emission: Constraints on the atmosphere in eclipse. *Icarus*, 214(2):495-509, 2011
105. Simon, S. and **Saur**, J. and Neubauer, F. M. and Wennmacher, A. and Dougherty, M. K., Magnetic signatures of a tenuous atmosphere at Dione, *Geophys. Res. Lett.*, 38, L15102, 2011
106. Pryor, W. R.; Rymer, A. M.; Mitchell, D. G.; Hill, T. W.; Young, D. T.; **Saur, J.**; et al., The auroral footprint of Enceladus on Saturn, **Nature**, 472, 331-333, 2011
107. Simon, S. and **Saur**, J. and Kriegel, H. and Neubauer, F. M. and Motschmann, U. and Dougherty, M. K., Influence of negatively charged plume grains and hemisphere coupling currents on the structure of Enceladus' Alfvén wings: Analytical modeling of Cassini magnetometer observations, *J. Geophys. Research (Space Physics)*, 116, A04221, 2011

### 2010

108. Müller, J. and Simon, S. and Motschmann, U. and Glassmeier, K.-H. and **Saur**, J. and Schüle, J. and Pringle, G. J., Magnetic field fossilization and tail reconfiguration in Titan's plasma environment during a magnetopause passage: 3D adaptive hybrid code simulations, *Planetary and Space Science*, 58, 1526-1546, 2010

109. Simon, S. and Wennmacher, A. and Neubauer, F. M. and Bertucci, C. L. and Kriegel, H. and **Saur**, J. and Russell, C. T. and Dougherty, M. K., Titan's highly dynamic magnetic environment: A systematic survey of Cassini magnetometer observations from flybys TA-T62, *Planetary and Space Science*, 58, 1230-1251, 2010
110. Müller, A. L. and **Saur**, J. and Krupp, N. and Roussos, E. and Mauk, B. H. and Rymer, A. M. and Mitchell, D. G. and Krimigis, S. M., Azimuthal plasma flow in the Kronian magnetosphere, *J. Geophys. Res.*, 115, A14, A08203, 2010
111. Wulms, V. and **Saur**, J. and Strobel, D. F. and Simon, S. and Mitchell, D. G., Energetic neutral atoms from Titan: Particle simulations in draped magnetic and electric fields, *Journal of Geophysical Research (Space Physics)*, 2010, 115, A06310, 2010
112. **Saur**, J. and Neubauer, F. M. and Glassmeier, K.-H., Induced Magnetic Fields in Solar System Bodies, *Space Science Reviews*, 152, 391-421, 2010
113. S. Jacobsen, **J. Saur**, F.M. Neubauer, B. Bonfond, J.-C. Gérard and D. Grodent, The Location and the Spatial Shape of Electron Beam's in Io's Wake, *J. Geophys. Res.*, A04205, 2010

## 2009

114. Kurth W., et al., Auroral Processes, in *Saturn after Cassini-Huygens*, ed. M.K. Dougherty, L.W. Esposito and S.M. Krimigis, 2009
115. Kriegel H., S. Simon, J. Mueller, U. Motschmann, **J. Saur**, K.-H. Glassmeier, M.K. Dougherty, The plasma interaction of Enceladus: 3D Hybrid simulations and comparison with Cassini MAG data, *Planetary and Space Science*, 57, 2113-2122, 2009
116. Alexandrova, O., **J. Saur**, C. Lacombe, A. Mangeney, J. Mitchell, S.J. Schwartz, and P. Robert, Universality of Solar-Wind Turbulent Spectrum from MHD to Electron Scales, *Phys. Rev. Lett.*, 103, 165003, 2009
117. Coustenis A. et al., TandEM: Titan and Enceladus mission, *Experimental Astronomy*, 23, 893-946, 2009
118. Simon S., U. Motschmann, G. Kleindienst, **J. Saur**, C. L. Bertucci, M. K. Dougherty, C. S. Arridge, and A. J. Coates, Titan's plasma environment during a magnetosheath excursion: Real-time scenarios for Cassini's T32 flyby from a hybrid simulation, *Ann. Geophys.*, 27, 669-685, 2009
119. Mitchell, D. G.; Kurth, W. S., Hospodarsky, G. B., Krupp, N., **Saur**, J., Mauk, B. H., Carbary, J. F., Krimigis, S. M.; Dougherty, M. K.; Hamilton, D. C., Ion conics and electron beams associated with auroral processes on Saturn, *J. Geophys. Res.*, 114, A02212, 2009
120. Simon, S., **Saur**, **J.**, Neubauer, F. M., Motschmann, U., Dougherty, M. K., Plasma wake of Tethys: Hybrid simulations versus Cassini MAG data, *Geophys. Res. Lett.*, 36, L04108, 2009

## 2008

121. **Saur J.**, et al., Evidence for temporal variability of Enceladus' gas jets: Modeling of Cassini observations, *Geophys. Res. Lett.*, 35, L20105, 2008
122. Jones G.H. et al., The dust halo of Saturn's largest icy moon, Rhea, **Science**, 319, 1380, 2008
123. Alexandrova O. and **J. Saur**, Alfvén vortices in Saturn's magnetosheath: Cassini observations, *Geophys. Res. Lett.*, 35, L15102, 2008
124. Bonfond B., D. Grodent, J.C. Gérard, A Radioti, **J. Saur** and S. Jacobsen, UV Io footprint leading spot: A key feature of understanding the UV Io footprint multiplicity?, *Geophys. Res. Lett.*, 35, L05107, 2008
125. Schilling N., F.M. Neubauer, **J. Saur**, Influence of the internally induced magnetic field on the plasma interaction of Europa *J. Geophys. Res.*, 113, A03203, 2008

### 2007

126. **Saur J.**, F.M. Neubauer, and N. Schilling, Hemisphere coupling in Enceladus' asymmetric plasma interaction, *J. Geophys. Res.*, 112, A11209, 2007
127. Mauk B.H. and **J. Saur**, Equatorial electron beams and auroral structuring at Jupiter, *J. Geophys. Res.*, 112, A10221, 2007
128. Schilling N., F.M. Neubauer, **J. Saur**, Time-varying interaction of Europa with the jovian magnetosphere: Constraints on the conductivity of Europa's subsurface ocean, *Icarus* 192, 41-55, 2007
129. Retherford K.D., J.R. Spencer, S.A. Stern, **J. Saur**, et al., Io's Atmospheric Response to Eclipse: UV Aurorae Observations, **Science**, 318, 237, 2007
130. Jacobsen S., F.M. Neubauer, **J. Saur** and N. Schilling, Io's nonlinear MHD-wave field in the heterogeneous Jovian magnetosphere, *Geophys. Res. Lett.*, 34, L10202, 2007
131. Bonfond B., J.-C. Gérard, D. Grodent and **J. Saur**, Ultraviolet Io footprint short timescale dynamics, *Geophys. Res. Lett.*, 34, L06201, 2007

### 2006

132. **Saur J.** et al., B.H. Mauk, D.G. Mitchell, N. Krupp, K.K. Khurana, S. Livi, S.M. Krimigis, P.T. Newell, D.J. Williams, P.C. Brandt, A. Lagg, E. Roussos, M.K. Dougherty, Anti-planetward auroral electron beams at Saturn, **Nature**, 439, 699-702, 2006
133. Dougherty M.K., K.K. Khurana, F.M. Neubauer, C.T. Russell, **J. Saur**, J.S. Leisner, and M.E. Burton, Identification of a dynamic atmosphere at Enceladus with the Cassini magnetometer, **Science**, 311, 1406, 2006
134. F.M. Neubauer et al., Titan's magnetotail from magnetic field and electron plasma observations and modeling: Cassini flybys TA, TB, and T3, *J. Geophys. Res.*, 112, A10220, 2006

### 2005

135. Krimigis, S.M. et al., Dynamics of Saturn's Magnetosphere from MIMI During Cassini's Orbital Insertion, **Science**, 307, 1270-1273, 2005
136. Brandt P.C., D.G. Mitchell, E.C. Roelof, S.M. Krimigis, C.P. Paranicas, B.H. Mauk, **J. Saur** and R. DeMajistre, ENA imaging: Seeing the invisible, *Johns Hopkins APL Technical Digest*, 26, 143-155, 2005
137. Paranicas C., D.G. Mitchel, S. Livi, S.M. Krimigis, E. Roussos, N. Krupp, J. Woch, A. Lagg, **J. Saur**, F.S. Turner, Evidence of Enceladus and Tethys microsignatures, *Geophys. Res. Lett.*, 32, L2010, 2005
138. B.H. Mauk, **J. Saur**, D.G. Mitchell, E.C. Roelof, P.C. Brandt, T.P. Armstrong, D.C. Hamilton, S.M. Krimigis, N. Krupp, S.A. Livi, J.W. Manweiler and C.P. Paranicas, Energetic particle injections in Saturn's magnetosphere, *Geophys. Res. Lett.*, 32, L14S05, 2005
139. **Saur J.** and D.F. Strobel, Atmospheres and plasma interactions at Saturn's largest inner icy satellites, *Astrophys. J.*, 620, L115-L118, 2005

#### 2004

140. **Saur J.**, F.M Neubauer, P. Zarka, J. Connerney, and M.G. Kivelson, Io's plasma interaction with its torus, in *Jupiter*, ed. F. Bagenal, T. Dowling, W. McKinnon, 537-560, 2004
141. Kivelson M.G., F. Bagenal, W. Kurth, F. M. Neubauer, C. Paranicas, **J. Saur**, Magnetospheric interactions with satellites, in *Jupiter*, ed. F. Bagenal, T. Dowling, W. McKinnon, 513-536, 2004
142. **Saur, J.** and D.F. Strobel, Relative contributions of sublimation and volcanoes to Io's atmosphere inferred from its plasma interaction during solar eclipse, *Icarus*, 171, 411-420, 2004
143. **Saur, J.**, B.H. Mauk, A. Kassner, and F.M. Neubauer, A model for the azimuthal plasma velocity in Saturn's magnetosphere, *J. Geophys. Res.*, 109, A05217, 2004
144. **Saur, J.**, A model of Io's local electric field for a combined Alfvénic and unipolar-inductor far-field coupling, 109, A01210, doi:10.1029/2002JA009354, *J. Geophys. Res.*, 2004
145. **Saur, J.**, Turbulent heating of Jupiter's middle magnetosphere, *Astrophys. J.*, 602:L137-L140, 2004
146. Geissler P., A. McEwen, C. Porco, D.F. Strobel, **J. Saur**, J. Ajello, R. West, Cassini observations of Io's visible aurorae, *Icarus*, 172, 127-140, 2004

#### 2003

147. **Saur, J.**, A. Pouquet, and W.H. Matthaeus, An acceleration mechanism for the generation of the main auroral oval on Jupiter, *Geophys. Res. Lett.*, 30(5), 1260, doi:10.1029/2002GL015761, 2003

148. **Saur, J.**, D.F. Strobel, F.M. Neubauer and M.E. Summers, The ion mass loading rate at Io, *Icarus*, 163, 456-468, 2003

### 2002

149. **Saur, J.**, H. Politano, A. Pouquet, and W.H. Matthaeus, Evidence for weak turbulence in Jupiter's middle magnetosphere, *Astron. & Astrophys.*, 386(2), 699, 2002
150. **Saur, J.**, F.M. Neubauer, D.F. Strobel and M.E. Summers, Interpretation of Galileo's Io plasma and field observations: IO, I24, and I27 flybys and close polar passes, *J. Geophys. Res.*, 107, 1422, 2002
151. Strobel D.F., **J. Saur** , P.D. Feldman, and M.A. McGrath, HST/STIS search for an atmosphere on Callisto: A Jovian unipolar inductor, *Astrophys. J.* , 581,L51-L54, 2002

### 2002

152. **Saur, J.**, F.M. Neubauer, D.F. Strobel, and M.E. Summers, Io's ultraviolet aurora: Remote sensing of Io's interaction, *Geophys. Res. Letters*, 27, 2893-2896, 2000

### 1999

153. **Saur, J.**, F.M. Neubauer, D.F. Strobel, and M.E. Summers, Three-dimensional plasma simulation of Io's interaction with the Io plasma torus: Asymmetric plasma flow, *J. Geophys. Res.*, 104, 25,105-25,126, 1999

### 1998

154. **Saur, J.**, and J.W. Bieber, Geometry of low frequency solar wind magnetic turbulence: Evidence for radially aligned Alfvénic fluctuations, *J. Geophys. Res.*, 104, 9,975-9,988, 1999
155. **Saur, J.**, D.F. Strobel, and F.M. Neubauer, Interaction of the Jovian magnetosphere with Europa: Constraints on the neutral atmosphere, *J. Geophys. Res.*, 103, 19,947-19,962, 1998

## Recent Invited Talks

Magnetospheres of the Outer Planets Conference, Liège, Belgium, 2022, Colloquium University of Groningen, Netherlands, 2021, Colloquium Boston University, Boston, USA (2020) (postponed due to Corona), Colloquium University of New Hampshire, Durham, USA (2020) (postponed due to Corona), German Physical Society Spring Meeting, Bonn, Germany (2020 (canceled due to Corona), Magnetospheres of the Outer Planets Conference, Sendai, Japan (2019); Euro-planet workshop, Outer planet moon-magnetosphere interactions, Selfoss, Iceland (2019); Space Exploration of the Outer Solar System Icy Moons Oceans, ISSI, Bern Switzerland (2018),



Magnetospheres of the Outer Planets Conference, Uppsala, Sweden (2017); Max Planck Institute for Solar System Research, Göttingen, Germany (2017); ESTEC, Noordwijk, Netherlands (2016); THOR-Turbulence Meeting, Barcelona, Spain (2016); Chapman Conference, Dubrovnik, Croatia (2016); Free University Berlin (2016); KTH, Stockholm, Sweden (2016); Applied Physics Laboratory, Johns Hopkins University, Laurel, USA (2015); Forschungszentrum Jülich, Germany (2015); Academy of Sciences NRW, Düsseldorf, Germany (2015), European Space Weather Week, Oostende, Belgium (2015)

# Teaching and Supervision

## Supervision:

PhD: 11 finished, 6 ongoing, Master:  $\geq 30$ , Bachelor:  $\geq 30$ , Habilitation: 1, Postdoc: 6, several students co-supervised

## Classes:

1. 2021 Summer, Introduction to Geophysics, Bachelor: Geophysics and Meteorology (2 hours)
2. 2021 Summer, Space Physics, Master: Physics of the Earth and Atmosphere (3 hours, 2 hours exercises)
3. 2021 Summer, Literature Seminar, Bachelor: Geophysics and Meteorology (2 hours)
4. 2020 Winter, Welt im Computer, organized by Competence Area: Quantitative Modeling of Complex System, university wide lecture series
5. 2020 Winter, Geophysical Fluid Dynamics, Bachelor: Geophysics and Meteorology, (3 hours, 2 hours exercises, 2 hours computer exercises)
6. 2020 Winter, Geophysics of the Solar System, Master: Physics of the Earth and Atmosphere (2 hours, 2 hours exercises)
7. 2020 Summer, Introduction to Geophysics, Bachelor: Geophysics and Meteorology (2 hours)
8. 2020 Summer, Space Physics, Master: Physics of the Earth and Atmosphere (3 hours, 2 hours exercises)
9. 2020 Summer, Literature Seminar, Bachelor: Geophysics and Meteorology (2 hours)
10. 2019 Winter, Welt im Computer, organized by Competence Area: Quantitative Modeling of Complex System, university wide lecture series
11. 2019 Winter, Geophysics of the Earth, Bachelor: Geophysics and Meteorology, (3 hours, 2 hours exercises, 2 hours computer exercises)
12. 2019 Winter, Geophysics of the Solar System, Master: Physics of the Earth and Atmosphere (2 hours, 2 hours exercises)
13. 2019 Summer, Introduction to Geophysics, Bachelor: Geophysics and Meteorology (2 hours)
14. 2019 Summer, Space Physics, Master: Physics of the Earth and Atmosphere (3 hours, 2 hours exercises)
15. 2018 Winter, Geophysics of the Solar System, Master: Physics of the Earth and Atmosphere (2 hours, 2 hours exercises)
16. 2018 Winter, Geophysical Fluid Dynamics, Atmosphere, Ocean, Ionosphere, Bachelor: Geophysics and Meteorology, (3 hours, 2 hours exercises, 2 hours computer exercises)

17. 2018 Summer, Introduction to Geophysics, Bachelor: Geophysics and Meteorology (2 hours)
18. 2018 Summer, Space Physics, Master: Physics of the Earth and Atmosphere (3 hours, 2 hours exercises)
19. 2018 Summer, Literature Seminar, Bachelor: Geophysics and Meteorology (2 hours)
20. 2017 Winter, Geophysics of the Earth, Bachelor: Geophysics and Meteorology, (3 hours, 2 hours exercises, 2 hours computer exercises)
21. 2017 Winter, Geophysics of the Solar System, Master: Physics of the Earth and Atmosphere (2 hours, 2 hours exercises)
22. 2017 Summer, Introduction to Geophysics, Bachelor: Geophysics and Meteorology (2 hours)
23. 2017 Summer, Space Physics, Master: Physics of the Earth and Atmosphere (3 hours, 2 hours exercises)
24. 2016 Winter, Geophysics of the Solar System, Master: Physics of the Earth and Atmosphere (2 hours, 2 hours exercises)
25. 2016 Winter, Geophysical Fluid Dynamics, Atmosphere, Ocean, Ionosphere, Bachelor: Geophysics and Meteorology, (3 hours, 2 hours exercises, 2 hours computer exercises)
26. 2016 Summer, Introduction to Geophysics, Bachelor: Geophysics and Meteorology (2 hours)
27. 2016 Summer, Space Physics, Master: Physics of the Earth and Atmosphere (3 hours, 2 hours exercises)
28. 2016 Summer, Literature Seminar, Bachelor: Geophysics and Meteorology (2 hours)
29. 2015 Winter, Geophysics of the Solar System, Master: Physics of the Earth and Atmosphere (2 hours, 2 hours exercises)
30. 2015 Winter, Geophysics of the Earth, Bachelor: Geophysics and Meteorology, (3 hours, 2 hours exercises, 2 hours computer exercises)
31. 2014 Winter, Geophysics of the Solar System, Master: Physics of the Earth and Atmosphere (2 hours, 2 hours exercises)
32. 2014 Winter, Geophysical Fluid Dynamics, Atmosphere, Ocean, Ionosphere, Bachelor: Geophysics and Meteorology, (3 hours, 2 hours exercises, 2 hours computer exercises)
33. 2014 Summer, Space Physics, Master: Physics of the Earth and Atmosphere (3 hours, 2 hours exercises)
34. 2014 Summer, Introduction to Geophysics, Bachelor: Geophysics and Meteorology (2 hours)
35. 2013 Winter, Prognostic Modelling, Master: Physics of the Earth and Atmosphere (2 hours, 2 hours exercises)

36. 2013 Winter, Geophysics of the Earth, Bachelor: Geophysics and Meteorology, (3 hours, 2 hours exercises, 2 hours computer exercises)
37. 2012 Winter, Geophysics of the Solar System, Master: Physics of the Earth and Atmosphere (2 hours, 2 hours exercises)
38. 2013 Summer, Introduction to Geophysics, Bachelor: Geophysics and Meteorology (2 hours)
39. 2013 Summer, Space Physics, Master: Physics of the Earth and Atmosphere (3 hours, 2 hours exercises)
40. 2012 Winter, Geophysical Fluid Dynamics, Atmosphere, Ocean, Ionosphere, Bachelor: Geophysics and Meteorology, (3 hours, 2 hours exercises, 2 hours computer exercises)
41. 2012 Summer, Space Physics, Master: Physics of the Earth and Atmosphere (3 hours, 2 hours exercises)
42. 2012 Summer, Introduction to Geophysics, Bachelor: Geophysics and Meteorology (2 hours)
43. 2011 Winter, Prognostic Modelling, Master: Physics of the Earth and Atmosphere (2 hours, 2 hours exercises)
44. 2011 Winter, Geophysics of the Solar System, Master: Physics of the Earth and Atmosphere (2 hours, 2 hours exercises)
45. 2011 Winter, Geophysics of the Earth, Bachelor: Geophysics and Meteorology, (3 hours, 2 hours exercises, 2 hours computer exercises)
46. 2010 Winter, Geophysics of the Solar System, Master Physics of the Earth and Atmosphere (2 hours, 2 hours exercises)
47. 2010 Winter, Geophysical Fluid Dynamics, Atmosphere, Ocean, Ionosphere, Bachelor: Geophysics and Meteorology, (3 hours, 2 hours exercises, 2 hours computer exercises)
48. 2010 Summer, Space Physics, Master: Physics of the Earth and Atmosphere (3 hours, 2 hours exercises)
49. 2009 Summer, Introduction to Geophysics (2 hours)
50. 2009 Winter, Geophysics of the Solar System, Master: Physics of the Earth and Atmosphere (2 hours, 2 hours exercises)
51. 2009 Winter, Prognostic Modelling, Master: Physics of the Earth and Atmosphere (2 hours, 2 hours exercises)
52. 2009 Winter, Geophysics of the Earth, Bachelor: Geophysics and Meteorology, (3 hours, 2 hours exercises, 2 hours computer exercises)
53. 2009 Summer, Time-Series Analysis, Diplom-Studiengang Geophysik (3 hours + hours exercises)
54. 2008 Winter, Literature Seminar, Bachelor: Geophysics and Meteorology (2 hours)

55. 2008 Winter, Geophysical Fluid Dynamics, Atmosphere, Ocean, Ionosphere, Bachelor: Geophysics and Meteorology, (3 hours, 2 hours exercises, 2 hours computer exercises)
56. 2008 Summer, Space Physics, Master: Physics of the Earth and Atmosphere (3 hours, 2 hours exercises)
57. 2008 Summer, Introduction to Geophysics, Bachelor: Geophysics and Meteorology (2 hours)
58. 2007 Winter, Geophysics of the Earth, Bachelor: Geophysics and Meteorology, (3 hours, 2 hours exercises, 2 hours computer exercises)
59. Winter 2008, Introduction to Geophysics, Bachelor: Geophysics and Meteorology (2 hours)
60. 2007 Winter, Geophysics of the Earth, Bachelor: Geophysics and Meteorology, (3 hours, 2 hours exercises, 2 hours computer exercises)
61. 2007 Summer, Introduction to Geophysics, Bachelor: Geophysics and Meteorology (2 hours)
62. 2006 Winter, Geophysics 3, Time-Series Analysis, Hauptstudium, Diplom Geophysik, (3 hours + 2 hours exercises)
63. 2006 Summer, Geophysics 2, Geophysical Fluid Dynamics, Hauptstudium, Diplom Geophysik, (3 hours + 2 hours exercises)
64. 2006 Summer, Introduction to Geophysics, Diplom Geophysik, (2 hours)
65. 2005 Winter, Geophysics 1, Geophysics of the Earth, Hauptstudium, Diplom Geophysik, (3 hours + 2 hours exercises)
66. 2003, Selected Topics in Space Physics, Lecture Series, Johns Hopkins University, (2 hours)