

Curriculum Vitae – Prof. Dr. JOACHIM SAUR

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, 2022, 2023, 2024)

James Webb Space Telescope, Collaborator in Cycle 0 Early Release Science, Co-I in Cycle 3 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;

4th Outer-Planets Moon-Magnetosphere Interaction Workshop, Cologne, April, 2025

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

170 peer-reviewed publications, including 8 publications in Nature & Science, 4 in Nature Astronomy, and 8 Book and Review Chapters (as first author), H-Index: 45 (after Web of Science) and 56 (after Google Scholar)

Peer-Reviewed Publications & Book Chapters

2025

1. Wahlund, J. -E., et al., including **Saur, J.** The Radio & Plasma Wave Investigation (RPWI) for the JUperiter ICy moons Explorer (JUICE), *Space Science Reviews*, 221, 1, id.1, DOI: 10.1007/s11214-024-01110-0, 2025

2024

2. Retherford, K. D., Becker, T. M., Gladstone, G. R., Greathouse, T. K., Davis, M. W., Velez, M. A., Freeman, M. A., Brooks, S. M., Ferrell, S., Giles, R. S., Hendrix, A. R., Hue, V., Johnson, E., Kammer, J. A., Marinan, A. D., D Mamo, B., McGrath, M. A., Molyneux, P. M., Nerney, E. G., Perez, B., Persson, K. B., Pope, S., Raut, U., Rickerson, R., Roth, L., **Saur, J.**, W Siegmund, O. H., Spencer, J. R., Steffl, A. J., Stern, S. A., Trantham, B. J., Versteeg, M. H., Winkenstern, J. , the Europa-UVS Team, Europa Ultraviolet Spectrograph (Europa-UVS), *Space Science Reviews*, 220, 8, id.89, DOI: 10.1007/s11214-024-01121-x, 2024
3. Strack, David, **Saur, Joachim**, The Spatiotemporal Structure of Induced Magnetic Fields in Callisto's Plasma Environment Due to Their Propagation With MHD Modes, *Journal of Geophysical Research: Space Physics*, 129, 12, 2024JA033235, DOI: 10.1029/2024JA033235, 2024
4. Kotsiaros, S., Connerney, J. E. P., **Saur, J.**, Kokkalis, A., Herceg, M., Martos, Y. M., Schlegel, S., Jrgensen, J. L., Bolton, S. J., Juno Observations Set New Constraints on the Electrodynamical Interaction Between Io and Jupiter, *Journal of Geophysical Research: Space Physics*, 129, 12, 2024JA032591, 14 pp., DOI: 10.1029/2024JA032591, 2024
5. **Saur, Joachim**, Duling, Stefan, Grayver, Alexander, Szalay, Jamey R., Analysis of Enceladus's Time-variable Space Environment to Magnetically Sound its Interior, *The Planetary Science Journal*, 5, 11, id.245, 36 pp., DOI: 10.3847/PSJ/ad8130, 2024
6. Callingham, J. R., Pope, B. J. S., Kavanagh, R. D., Bellotti, S., Daley-Yates, S., Damasso, M., Griemeier, J. -M., Guedel, M., Guenther, M., Kao, M. M., Klein, B., Mahadevan, S., Morin, J., Nichols, J. D., Osten, R. A., Prez-Torres, M., Pineda, J. S., Rigney, J., **Saur, J.**, Stefansson, G., Turner, J. D., Vedantham, H., Vidotto, A. A., Villadsen, J., Zarka, P., Radio signatures of star-planet interactions, exoplanets and space weather, *Nature Astronomy*, 8, p. 1359-1372, DOI: 10.1038/s41550-024-02405-6, 2024
7. Bockele-Morvan, Dominique, Poch, Olivier, Leblanc, Francois, Zakharov, Vladimir, Lelouch, Emmanuel, Quirico, Eric, de Pater, Imke, Fouchet, Thierry, Rodriguez-Ovalle, Pablo, Roth, Lorenz, Merlin, Frdric, Duling, Stefan, **Saur, Joachim**, Masson, Adrien, Fry,

- Patrick, Trumbo, Samantha, Brown, Michael, Cartwright, Richard, Cazaux, Stphanie, de Kleer, Katherine, Fletcher, Leigh N., Milby, Zachariah, Moingeon, Audrey, Mura, Alessandro, Orton, Glenn S., Schmitt, Bernard, Tosi, Federico, Wong, Michael H., A patchy CO₂ exosphere on Ganymede revealed by the James Webb Space Telescope, *Astronomy & Astrophysics*, 690, id.L11, 21 DOI: 10.1051/0004-6361/202451599, 2024
8. Van Hoolst, Tim, Tobie, Gabriel, et al. including **Saur, J.**, Geophysical Characterization of the Interiors of Ganymede, Callisto and Europa by ESA’s JUpiter ICy moons Explorer, *Space Science Reviews*, 220, 5, id.54, DOI: 10.1007/s11214-024-01085-y, 2024
 9. Szalay, J. R., **Saur, J.**, Allegrini, F., Ebert, R. W., Valek, P. W., Clark, G., Accetta, K., Bagenal, F., Bolton, S. J., Damiano, P., Dols, V., Mauk, B., McComas, D. J., Paranicas, C., Sarkango, Y., Strobel, D., Sulaiman, A. H., Wilson, R. J., Ion Precipitation Into Io’s Poles Driven by a Strong Sub-Alfvnic Interaction, *Geophysical Research Letters*, 51, 5, article id. e2024GL110205, DOI: 10.1029/2024GL110205, 2024
 10. Allegrini, F., **Saur, J.**, Szalay, J. R., Ebert, R. W., Kurth, W. S., Cervantes, S., Smith, H. T., Bagenal, F., Bolton, S. J., Clark, G., Connerney, J. E. P., Louarn, P., Mauk, B., McComas, D. J., Pontoni, A., Sarkango, Y., Valek, P., Wilson, R. J., Electron Beams at Europa, *Geophysical Research Letters*, 51, 13, article id. e2024GL108422, DOI: 10.1029/2024GL108422, 2024
 11. Szalay, J. R., Allegrini, F., Ebert, R. W., Bolton, S. J., Fatemi, S., McComas, D. J., Pontoni, A., **Saur, J.**, Smith, H. T., Strobel, D. F., Vance, S. D., Vorburger, A., Wilson, R. J., Oxygen production from dissociation of Europa’s water-ice surface, *Nature Astronomy*, Volume 8, p. 567-576, DOI: 10.1038/s41550-024-02206-x, 2024
 12. Sarkango, Y., Szalay, J. R., Sulaiman, A. H., Damiano, P. A., McComas, D. J., Rabia, J., Delamere, P. A., **Saur, J.**, Clark, G., Ebert, R. W., Allegrini, F., Resonant Plasma Acceleration at Jupiter Driven by Satellite-Magnetosphere Interactions, *Geophysical Research Letters*, Volume 51, Issue 5, article id. e2023GL107431, DOI: 10.1029/2023GL107431, 2024
 13. Szalay, J. R., **Saur, J.**, McComas, D. J., Allegrini, F., Bagenal, F., Bolton, S. J., Ebert, R. W., Kim, T. K., Livadiotis, G., Poppe, A. R., Valek, P., Wilson, R. J., Zirnstein, E. J., Europa Modifies Jupiter’s Plasma Sheet, *Geophysical Research Letters*, Volume 51, Issue 6, article id. e2023GL105809, DOI: 10.1029/2023GL105809, 2024
 14. Bockelée-Morvan, D.; Lellouch, E., Poch, O., Quirico, E., Cazaux, S., de Pater, I., Fouchet, T., Fry, P. M., Rodriguez-Ovalle, P., Tosi, F., Wong, M. H., Boshuizen, I., de Kleer, K., Fletcher, L. N., Meunier, L., Mura, A., Roth, L., **Saur, J.**, Schmitt, B., Trumbo, S. K., Brown, M. E., O’Donoghue, J., Orton, G. S., Showalter, M. R., Composition and thermal properties of Ganymede’s surface from JWST/NIRSpec and MIRI observations, *Astronomy & Astrophysics*, Volume 681, id.A27, 34 pp., DOI: 10.1051/0004-6361/202347326, 2024

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15. Westlake, J. H., McNutt, R. L., Grey, M., Coren, D., Rymer, A. M., Cochrane, C. J., Luspay-Kuti, A., Hohlfeld, E., Seese, N., Crew, A., Liang, S., Diaz, T., Smith, H. T., Paty, C. S., Jia, X., Rogacki, S., Stevens, M. L., Kasper, J. C., Case, A. W., Slavin, J. A., Khurana, K. K., Kivelson, M. G., Shearer, C., Mandt, K. E., Asmar, K., Cooper, K.,

- Battista, C., Kim, C., Katz, S., Kusterer, M., Brown, L., Linko, D., Schlemm, C., Jaskulek, S., Dalton, J., Caranza, R., Reynolds, E. ; Richardson, M., **Saur, J.**, Krupp, N., Roussos, E., The Plasma Instrument for Magnetic Sounding (PIMS) on the Europa Clipper Mission, *Space Science Reviews*, 219, Issue 8, article id.62, DOI: 10.1007/s11214-023-01002-9, 2023
16. Winkenstern J., **Saur J.**, Detectability of Local Water Reservoirs in Europa’s Surface Layer under Consideration of Coupled Induction, 128, *J. Geophys. Res. (Planets)*, doi.org/10.1029/2023JE007992, 2023
 17. Schlegel, S., **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
 18. 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, Cochrane, 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
 19. 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
 20. 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/acccddd, 2023
 21. 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.

22. Elekes F., **Saur J.**, Space environment and magnetospheric Poynting fluxes of the exoplanet τ Boötis b, *Astron. Astrophys.*, doi.org/10.1051/0004-6361/202244947, forthcoming, 2023
23. 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- α images in transit of Jupiter, *Planetary Science J.*, 4, 1, doi:10.3847/PSJ/acaf7f, 2023
24. 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

25. **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
26. 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
27. 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
28. 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
29. Sulaiman A.H., Mauk, B.H., Szalay J.R., Allegrini F., Clark G., Gladstone G.R., Kotiaros 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
30. 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
31. 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

32. 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
33. 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
34. 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
35. 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
36. 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
37. 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
38. 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
39. 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

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40. **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
41. **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

42. **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
43. 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
44. 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
45. Sulaiman A.H. et al., Enceladus and Titan: emerging worlds of the Solar System, *Experimental Astronomy*, doi:10.1007/s10686-021-09810-z, 2021
46. 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
47. Verscharen, D. et al., A Case Study for Electron-Astrophysics, *Experimental Astronomy*, doi:10.1007/s10686-021-09761-5, 2021

2020

48. 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
49. 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
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Recent Invited Talks

Star-Planet-Interaction Workshop, Saint Malo (2024), Moon-Magnetosphere-Interaction Workshop, Dublin (2024), Leiden University Colloquium (2024), ISSI Workshop, Io's plasma interaction, Bern (2023) Applied Physics Laboratory (2023), Colloquium Space Physics Boston University (2023), Magnetospheres of the Outer Planets Conference, Liège, Belgium, Life around a radio star, Leiden; 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); Europlanet 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 Insitute for Solar System Research, Göttingen, Germany (2017); ESTEC, Noordwijk, Netherlands (2016); THOR-Turbulence Meeting, Barcelona, Spain (2016); Chapman Conference, Duvrovnik, Croatia (2016); Free University Berlin (2016); KTH, Stockholm, Schweden (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: ≥ 30 , Bachelor: ≥ 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)
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35. 2013 Winter, Prognostic Modelling, Master: Physics of the Earth and Atmosphere (2 hours, 2 hours exercises)

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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)