

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

Awards, Honors

Outstanding Student Paper Award, 1999 (American Geophysical Union)

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

Society of Scholar Johns Hopkins University, 2017

Professional Affiliations

Deutsche Geophysikalische Gesellschaft

American Geophysical Union

Division of Planetary Sciences of the American Astronomical Society

Mission Participation, Science Projects

Hubble Space Telescope, PI in Cycle 16 (2008), Cycle 18 (2010, 2011), Cycle 20 (2012), Cycle 22 (2016), Co-I in multiple Cycles (2007, 2009, 2013, 2014, 2015, 2016)

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

Hubble Space Telescope, Time Allocation Committee, Cycle 14 (2005)
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
Speaker of Competence Area: Quantitative Modeling of Complex Systems, within Excellence Initiative of Univ. of Cologne (2013-present)

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

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

89 peer-reviewed publications, including 7 publications in Nature & Science, 6 Book Chapters, H-Index: 28 (after Web of Science), 33 (after Google Scholar)

Peer-Reviewed Publications:

1. 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*, in press, 2017
2. Hartkorn O., **J. Saur**, Induction signals from Callisto's ionosphere and their implications on a possible subsurface ocean. *J. Geophys. Res.*, in press. doi:10.1002/2017JA024269, 2017
3. Clark G. et al. including **J. Saur**, Energetic particle signatures of magnetic field-aligned potentials over Jupiter's polar regions, *Geophys. Res. Lett.*, 44, doi:10.1002/2017GL074366.
4. B. Bonfond, , **J. Saur**, D. Grodent, S.V. Badman, D. Bisikalo, V. Shematovich, J.-C. Gérard, A. Radiotti, The tails of the satellite auroral footprints at Jupiter, *J. Geophys. Res.*, 122, doi:10.1002/2017JA024370, 2017

5. 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
6. 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
7. 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
8. 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
9. 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
10. 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
11. 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
12. 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
13. 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
14. 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
15. 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
16. 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
17. von Papen M., **J. Saur**, Forward Modeling of Reduced Power Spectra from Three-dimensional k-space, *Astr. Phys. J.*, 806, 11, 116, 2015

18. **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
19. 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
20. 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)
21. von Papen M., **J. Saur**, O. Alexandrova, Turbulent magnetic field fluctuations in Saturn's magnetosphere, *J. Geophys. Res. (Space Physics)*, 119, 2014
22. 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
23. 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
24. Simon, S., **J. Saur**, S. C. Treeck, H. Kriegel, M.K. Dougherty, Discontinuities in the magnetic field near Enceladus, *Geophys. Res. Lett.*, 41, 3359-3366, 2014
25. 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
26. Plainaki, C., A. Milillo, A. Mura, **J. Saur**, S. Orsini, S. Massetti, Exospheric O₂ densities at Europa during different orbital phases, *Planet. Space Science*, 88, 42-52, 2013
27. 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
28. 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
29. Simon S., H. Kriegel, **J. Saur**, A. Wennmacher, Energetic aspects of Enceladus' magnetospheric interaction, *J. Geophys. Res. (Space Physics)*, 118(6), 3430-3445, 2013
30. **Saur J.**, T. Grambusch, S. Duling, F. M. Neubauer, S. Simon, Magnetic energy fluxes in sub-Alfvnic planet star and moon planet interactions, *Astron. Astrophys.*, 552, 20, 2013
31. 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
32. 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

33. 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
34. 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
35. 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
36. Christophe B., et al. (including **J. Saur**), OSS (Outer Solar System): a fundamental and planetary physics mission to Neptune, Triton and the Kuiper Belt, *Experimental Astronomy*, 34(2), 203-242, 2012
37. Arridge C.S., et al. (including **J. Saur**) Uranus Pathfinder: exploring the origins and evolution of Ice Giant planets. *Experimental Astronomy*, 33(2), 753-791 2012
38. Seufert M., **J. Saur** und F.M. Neubauer Multi-frequency electromagnetic sounding of the Galilean moons *Icarus*, 214(2), 477-494, 2011
39. **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
40. 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
41. 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
42. 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
43. Pryor, W.R. et al. (including **J. Saur**), The auroral footprint of Enceladus on Saturn, **Nature**, 472, 331-333, 2011
44. 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
45. 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

46. 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
47. 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
48. 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
49. **Saur**, J. and Neubauer, F. M. and Glassmeier, K.-H., Induced Magnetic Fields in Solar System Bodies, *Space Science Reviews*, 152, 391-421, 2010
50. 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
51. 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
52. 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
53. Coustenis A. et al., TandEM: Titan and Enceladus mission, *Experimental Astronomy*, 23, 893-946, 2009
54. 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
55. 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
56. 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
57. **Saur J.**, et al., Evidence for temporal variability of Enceladus' gas jets: Modeling of Cassini observations, *Geophys. Res. Lett.*, 35, L20105, 2008
58. Jones G.H. et al. (including **J. Saur**, The dust halo of Saturn's largest icy moon, Rhea, **Science**, 319, 1380, 2008
59. Alexandrova O. and **J. Saur**, Alfvén vortices in Saturn's magnetosheath: Cassini observations, *Geophys. Res. Lett.*, 35, L15102, 2008

60. 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
61. 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
62. **Saur J.**, F.M. Neubauer, and N. Schilling, Hemisphere coupling in Enceladus' asymmetric plasma interaction, *J. Geophys. Res.*, 112, A11209, 2007
63. Mauk B.H. and **J. Saur**, Equatorial electron beams and auroral structuring at Jupiter, *J. Geophys. Res.*, 112, A10221, 2007
64. 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
65. 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
66. 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
67. Bonfond B., J.-C. Gérard, D. Grodent and **J. Saur**, Ultraviolet Io footprint short timescale dynamics, *Geophys. Res. Lett.*, 34, L06201, 2007
68. **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
69. 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
70. F.M. Neubauer et al. (including **J. Saur**, Titan's magnetotail from magnetic field and electron plasma observations and modeling: Cassini flybys TA, TB, and T3, *J. Geophys. Res.*, 112, A10220, 2006
71. Krimigis, S.M. et al., **including J. Saur**, Dynamics of Saturn's Magnetosphere from MIMI During Cassini's Orbital Insertion, **Science**, 307, 1270-1273, 2005
72. 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
73. Paranicas C., D.G. Mitchell, 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
74. 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
75. **Saur J.** and D.F. Strobel, Atmospheres and plasma interactions at Saturn's largest inner icy satellites, *Astrophys. J.*, 620, L115-L118, 2005
76. **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

77. **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
78. **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
79. **Saur, J.**, Turbulent heating of Jupiter's middle magnetosphere, *Astrophys. J.*, 602:L137-L140, 2004
80. 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
81. **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
82. **Saur, J.**, D.F. Strobel, F.M. Neubauer and M.E. Summers, The ion mass loading rate at Io, *Icarus*, 163, 456-468, 2003
83. **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
84. **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
85. 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
86. **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
87. **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
88. **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
89. **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

Book Chapters

1. **Saur J.**, Electromagnetic Coupling in Star Planet Systems, *Handbook of Exoplanets*, Springer, in press, 2017
2. **Saur J.**, E. Chané, O. Hartkorn, Modeling Magnetospheric Fields in the Jupiter System, *Planetary Magnetism*, Springer, in press, 2017
3. 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*, in press, 2017

4. Kurth W., et al., Auroral Processes, in *Saturn after Cassini-Huygens*, ed. M.K. Dougherty, L.W. Esposito and S.M. Krimigis, 2009
5. **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
6. 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

Teaching and Supervision

Supervision:

PhD: 9 finished, 4 ongoing, Master: >12, Bachelor: >17, Habilitation: 1, Postdoc: 5 (since 2005), several students cosupervised earlier

Classes:

1. 2016 Summer, Introduction to Geophysics, Bachelor: Geophysics and Meteorology (2 hours)
2. 2016 Summer, Space Physics, Master: Physics of the Earth and Atmosphere (3 hours, 2 hours exercises)
3. 2016 Summer, Literature Seminar, Bachelor: Geophysics and Meteorology (2 hours)
4. 2015 Winter, Geophysics of the Solar System, Master: Physics of the Earth and Atmosphere (2 hours, 2 hours exercises)
5. 2015 Winter, Geophysics of the Earth, Bachelor: Geophysics and Meteorology, (3 hours, 2 hours exercises, 2 hours computer exercises)
6. 2014 Winter, Geophysics of the Solar System, Master: Physics of the Earth and Atmosphere (2 hours, 2 hours exercises)
7. 2014 Winter, Geophysical Fluid Dynamics, Atmosphere, Ocean, Ionosphere, Bachelor: Geophysics and Meteorology, (3 hours, 2 hours exercises, 2 hours computer exercises)
8. 2014 Summer, Space Physics, Master: Physics of the Earth and Atmosphere (3 hours, 2 hours exercises)
9. 2014 Summer, Introduction to Geophysics, Bachelor: Geophysics and Meteorology (2 hours)
10. 2013 Winter, Prognostic Modelling, Master: Physics of the Earth and Atmosphere (2 hours, 2 hours exercises)

11. 2013 Winter, Geophysics of the Earth, Bachelor: Geophysics and Meteorology, (3 hours, 2 hours exercises, 2 hours computer exercises)
12. 2012 Winter, Geophysics of the Solar System, Master: Physics of the Earth and Atmosphere (2 hours, 2 hours exercises)
13. 2013 Summer, Introduction to Geophysics, Bachelor: Geophysics and Meteorology (2 hours)
14. 2013 Summer, Space Physics, Master: Physics of the Earth and Atmosphere (3 hours, 2 hours exercises)
15. 2012 Winter, Geophysical Fluid Dynamics, Atmosphere, Ocean, Ionosphere, Bachelor: Geophysics and Meteorology, (3 hours, 2 hours exercises, 2 hours computer exercises)
16. 2012 Summer, Space Physics, Master: Physics of the Earth and Atmosphere (3 hours, 2 hours exercises)
17. 2012 Summer, Introduction to Geophysics, Bachelor: Geophysics and Meteorology (2 hours)
18. 2011 Winter, Prognostic Modelling, Master: Physics of the Earth and Atmosphere (2 hours, 2 hours exercises)
19. 2011 Winter, Geophysics of the Solar System, Master: Physics of the Earth and Atmosphere (2 hours, 2 hours exercises)
20. 2011 Winter, Geophysics of the Earth, Bachelor: Geophysics and Meteorology, (3 hours, 2 hours exercises, 2 hours computer exercises)
21. 2010 Winter, Geophysics of the Solar System, Master Physics of the Earth and Atmosphere (2 hours, 2 hours exercises)
22. 2010 Winter, Geophysical Fluid Dynamics, Atmosphere, Ocean, Ionosphere, Bachelor: Geophysics and Meteorology, (3 hours, 2 hours exercises, 2 hours computer exercises)
23. 2010 Summer, Space Physics, Master: Physics of the Earth and Atmosphere (3 hours, 2 hours exercises)
24. 2009 Summer, Introduction to Geophysics (2 hours)
25. 2009 Winter, Geophysics of the Solar System, Master: Physics of the Earth and Atmosphere (2 hours, 2 hours exercises)
26. 2009 Winter, Prognostic Modelling, Master: Physics of the Earth and Atmosphere (2 hours, 2 hours exercises)
27. 2009 Winter, Geophysics of the Earth, Bachelor: Geophysics and Meteorology, (3 hours, 2 hours exercises, 2 hours computer exercises)
28. 2009 Summer, Time-Series Analysis, Diplom-Studiengang Geophysik (3 hours + hours exercises)
29. 2008 Winter, Literature Seminar, Bachelor: Geophysics and Meteorology (2 hours)

30. 2008 Winter, Geophysical Fluid Dynamics, Atmosphere, Ocean, Ionosphere, Bachelor: Geophysics and Meteorology, (3 hours, 2 hours exercises, 2 hours computer exercises)
31. 2008 Summer, Space Physics, Master: Physics of the Earth and Atmosphere (3 hours, 2 hours exercises)
32. 2008 Summer, Introduction to Geophysics, Bachelor: Geophysics and Meteorology (2 hours)
33. 2007 Winter, Geophysics of the Earth, Bachelor: Geophysics and Meteorology, (3 hours, 2 hours exercises, 2 hours computer exercises)
34. Winter 2008, Introduction to Geophysics, Bachelor: Geophysics and Meteorology (2 hours)
35. 2007 Winter, Geophysics of the Earth, Bachelor: Geophysics and Meteorology, (3 hours, 2 hours exercises, 2 hours computer exercises)
36. 2007 Summer, Introduction to Geophysics, Bachelor: Geophysics and Meteorology (2 hours)
37. 2006 Winter, Geophysics 3, Time-Series Analysis, Hauptstudium, Diplom Geophysik, (3 hours + 2 hours exercises)
38. 2006 Summer, Geophysics 2, Geophysical Fluid Dynamics, Hauptstudium, Diplom Geophysik, (3 hours + 2 hours exercises)
39. 2006 Summer, Introduction to Geophysics, Diplom Geophysik, (2 hours)
40. 2005 Winter, Geophysics 1, Geophysics of the Earth, Hauptstudium, Diplom Geophysik, (3 hours + 2 hours exercises)
41. 2003, Selected Topics in Space Physics, Lecture Series, Johns Hopkins University, (2 hours)