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

Awards, Honors

Society of Scholars, Johns Hopkins University, 2017
Gauss-Lecture of German Geophysical Society, 2010 (given at European Geoscience Union General Assembly)
Outstanding Student Paper Award, 1999 (American Geophysical Union)

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, PI in Cycle 16 (2008), Cycle 18 (2010), Cycle 20 (2012), Cycle 24 (2016), Cycle 27 (2019), Co-I in multiple Cycles (2007, 2009, 2013, 2014, 2015, 2016, 2017, 2019)
James Webb Space Telescope, Collaborator, Cycle 0, Early Release Science
ALMA, Co-I, Cycle 7

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), Mid-Cycle 24 (2017), Mid-Cycle 25 (2018), External Reviewer Cycle 26 (2018)
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 Extraterrerstr. 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
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, Suedeutsche Zeitung, Frankfurter Allgemeine, Zeit, Koelner Stadtanzeiger, etc.

Publications

111 peer-reviewed publications, including 8 publications in Nature & Science, 1 in Nature Astronomy, and 7 Book Chapters, H-Index: 31 (after Web of Science) and 35 (after Google Scholar)

Peer-Reviewed Publications & Book Chapters

1. **Saur J**, Mini-magnetospheres and Moon-magnetosphere Interactions: Overview Moon-magnetosphere Interactions, *in AGU Books Space Physics and Aeronomy: Magnetospheres*, ed. R. Maggiolo, N. André, H. Hasegawa, D. Welling, accepted, 2019

2. Kotsiaros, S., et al. (including **J. Saur**), Birkeland currents in Jupiter's magnetosphere observed by the polar orbiting Juno spacecraft, *Nature Astronomy*, 10.1038/s41550-019-0819-7, 2019

3. Hue V., Greathouse T.K., Bonfond B., **Saur J.**, et al., Juno-UVS Observation of the Io Footprint During Solar Eclipse, *J. Geophys. Res. (Space Physics)*, 124 https://doi.org/10.1029/2018JA026431 (2019)

4. 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

5. **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

6. **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

7. **Saur J.**, Electromagnetic Coupling in Star-Planet Systems, *Handbook of Exoplanets*, Springer, doi:10.1007/978-3-319–55333-7 27, id.27, 2018

8. **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

9. Mura A. et al. including **J. Saur**, Juno observations of spot structures and a split tail in Io-induced aurorae on Jupiter, **Science**, 10.1126/science.aat1450, 361, 774, 2018

10. 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

11. Szalay J.R. et al., including **J. Saur**, In-Situ Observations Connected to the Io Footprint Tail Aurora, *J. Geophys. Res. (Planets)*, doi:10.1029/2018JE005752R, 2018

12. 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

13. Clark G. et al., including **J. Saur**, 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

14. 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

15. Grodent D., et al. including **J. Saur**, Jupiter's Aurora Observed with HST during Juno Orbits 3 to 7 *J. Geophys. Res.* , doi.org/10.1002/2017JA025046, 2018

16. Plainaki C., et al. including **J. Saur**, Towards a global unified model of Europas tenuous atmosphere. *Space Science Reviews*, 214(1), 40, doi:10.1007/s11214-018-0469-6, 2018

17. 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

18. 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

19. 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

20. Ebert R.W. et al. including **J. Saur**, 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

21. 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, 2017

22. 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

23. 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-α emissions observed by HST/STIS between 1998 and 2014 *Planet. Space Science*, 148, 35-44, doi:10.1016/j.pss.2017.10.006, 2017

24. 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

25. 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

26. 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

27. 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

28. 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

29. 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

30. 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

31. 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

32. 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

33. 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

34. 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

35. 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

36. von Papen M., **J. Saur**, Forward Modeling of Reduced Power Spectra from Three-dimensional k-space, *Astr. Phys. J.*, 806, 11, 116, 2015

37. **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

38. 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.141667111, 2014

39. 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)

40. von Papen M., **J. Saur**, O. Alexandrova, Turbulent magnetic field fluctuations in Saturn's magnetosphere, *J. Geophys. Res. (Space Physics)*, 119, 2014

41. 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

42. 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

43. 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

44. 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

45. Plainaki, C., A. Milillo, A. Mura, **J. Saur**, S. Orsini, S. Massetti, Exospheric O_2 densities at Europa during different orbital phases, *Planet. Space Science*, 88, 42-52, 2013

46. 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

47. 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

48. Simon S., H. Kriegel, **J. Saur**, A. Wennmacher, Energetic aspects of Enceladus' magnetospheric interaction, *J. Geophys. Res. (Space Physics)*, 118(6), 3430-3445, 2013

49. **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

50. 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

51. 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

52. 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

53. 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

54. 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

55. 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

56. 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

57. Seufert M., **J. Saur** und F.M. Neubauer Multi-frequency electromagnetic sounding of the Galilean moons *Icarus*, 214(2), 477-494, 2011

58. **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

59. 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' Alfvn wings: Hybrid simulations versus Cassini Magnetometer data. *J. Geophys. Res (Space Physics)*, 116(A10223), 2011

60. 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

61. 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

62. Pryor, W.R. et al. (including **J. Saur**), The auroral footprint of Enceladus on Saturn, **Nature**, 472, 331-333, 2011

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64. 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

65. 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

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83. Mauk B.H. and **J. Saur**, Equatorial electron beams and auroral structuring at Jupiter, *J. Geophys. Res.*, 112, A10221, 2007

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110. **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

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Recent Invited Talks

Magnetospheres of the Outer Planets Conference, Sendai, Japan (2019); Europlanet workshop, Outer planet moon-magnetosphere interactions, Selfoss, Iceland (2019); ExoOcean: Space Exploration of the Outer Solar System Icy Moons Oceans, ISSI, Bern Schwitzerland (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, Duprovnik, 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: 9 finished, 4 ongoing, Master: >12, Bachelor: >17, Habilitation: 1, Postdoc: 5 (since 2005), several students cosupervised earlier

Classes:

1. 2017 Winter, Geophysics of the Earth, Bachelor: Geophysics and Meteorology, (3 hours, 2 hours exercises, 2 hours computer exercises)
2. 2017 Winter, Geophysics of the Solar System, Master: Physics of the Earth and Atmosphere (2 hours, 2 hours exercises)
3. 2017 Summer, Introduction to Geophysics, Bachelor: Geophysics and Meteorology (2 hours)
4. 2017 Summer, Space Physics, Master: Physics of the Earth and Atmosphere (3 hours, 2 hours exercises)
5. 2016 Winter, Geophysics of the Solar System, Master: Physics of the Earth and Atmosphere (2 hours, 2 hours exercises)
6. 2016 Winter, Geophysical Fluid Dynamics, Atmosphere, Ocean, Ionosphere, Bachelor: Geophysics and Meteorology, (3 hours, 2 hours exercises, 2 hours computer exercises)
7. 2016 Summer, Introduction to Geophysics, Bachelor: Geophysics and Meteorology (2 hours)
8. 2016 Summer, Space Physics, Master: Physics of the Earth and Atmosphere (3 hours, 2 hours exercises)
9. 2016 Summer, Literature Seminar, Bachelor: Geophysics and Meteorology (2 hours)
10. 2015 Winter, Geophysics of the Solar System, Master: Physics of the Earth and Atmosphere (2 hours, 2 hours exercises)
11. 2015 Winter, Geophysics of the Earth, Bachelor: Geophysics and Meteorology, (3 hours, 2 hours exercises, 2 hours computer exercises)
12. 2014 Winter, Geophysics of the Solar System, Master: Physics of the Earth and Atmosphere (2 hours, 2 hours exercises)
13. 2014 Winter, Geophysical Fluid Dynamics, Atmosphere, Ocean, Ionosphere, Bachelor: Geophysics and Meteorology, (3 hours, 2 hours exercises, 2 hours computer exercises)
14. 2014 Summer, Space Physics, Master: Physics of the Earth and Atmosphere (3 hours, 2 hours exercises)
15. 2014 Summer, Introduction to Geophysics, Bachelor: Geophysics and Meteorology (2 hours)

16. 2013 Winter, Prognostic Modelling, Master: Physics of the Earth and Atmosphere (2 hours, 2 hours exercises)

17. 2013 Winter, Geophysics of the Earth, Bachelor: Geophysics and Meteorology, (3 hours, 2 hours exercises, 2 hours computer exercises)

18. 2012 Winter, Geophysics of the Solar System, Master: Physics of the Earth and Atmosphere (2 hours, 2 hours exercises)

19. 2013 Summer, Introduction to Geophysics, Bachelor: Geophysics and Meteorology (2 hours)

20. 2013 Summer, Space Physics, Master: Physics of the Earth and Atmosphere (3 hours, 2 hours exercises)

21. 2012 Winter, Geophysical Fluid Dynamics, Atmosphere, Ocean, Ionosphere, Bachelor: Geophysics and Meteorology, (3 hours, 2 hours exercises, 2 hours computer exercises)

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24. 2011 Winter, Prognostic Modelling, Master: Physics of the Earth and Atmosphere (2 hours, 2 hours exercises)

25. 2011 Winter, Geophysics of the Solar System, Master: Physics of the Earth and Atmosphere (2 hours, 2 hours exercises)

26. 2011 Winter, Geophysics of the Earth, Bachelor: Geophysics and Meteorology, (3 hours, 2 hours exercises, 2 hours computer exercises)

27. 2010 Winter, Geophysics of the Solar System, Master Physics of the Earth and Atmosphere (2 hours, 2 hours exercises)

28. 2010 Winter, Geophysical Fluid Dynamics, Atmosphere, Ocean, Ionosphere, Bachelor: Geophysics and Meteorology, (3 hours, 2 hours exercises, 2 hours computer exercises)

29. 2010 Summer, Space Physics, Master: Physics of the Earth and Atmosphere (3 hours, 2 hours exercises)

30. 2009 Summer, Introduction to Geophysics (2 hours)

31. 2009 Winter, Geophysics of the Solar System, Master: Physics of the Earth and Atmosphere (2 hours, 2 hours exercises)

32. 2009 Winter, Prognostic Modelling, Master: Physics of the Earth and Atmosphere (2 hours, 2 hours exercises)

33. 2009 Winter, Geophysics of the Earth, Bachelor: Geophysics and Meteorology, (3 hours, 2 hours exercises, 2 hours computer exercises)

34. 2009 Summer, Time-Series Analysis, Diplom-Studiengang Geophysik (3 hours + hours exercises)

35. 2008 Winter, Literature Seminar, Bachelor: Geophysics and Meteorology (2 hours)

36. 2008 Winter, Geophysical Fluid Dynamics, Atmosphere, Ocean, Ionosphere, Bachelor: Geophysics and Meteorology, (3 hours, 2 hours exercises, 2 hours computer exercises)

37. 2008 Summer, Space Physics, Master: Physics of the Earth and Atmosphere (3 hours, 2 hours exercises)

38. 2008 Summer, Introduction to Geophysics, Bachelor: Geophysics and Meteorology (2 hours)

39. 2007 Winter, Geophysics of the Earth, Bachelor: Geophysics and Meteorology, (3 hours, 2 hours exercises, 2 hours computer exercises)

40. Winter 2008, Introduction to Geophysics, Bachelor: Geophysics and Meteorology (2 hours)

41. 2007 Winter, Geophysics of the Earth, Bachelor: Geophysics and Meteorology, (3 hours, 2 hours exercises, 2 hours computer exercises)

42. 2007 Summer, Introduction to Geophysics, Bachelor: Geophysics and Meteorology (2 hours)

43. 2006 Winter, Geophysics 3, Time-Series Analysis, Haupstudium, Diplom Geophysik, (3 hours + 2 hours exercises)

44. 2006 Summer, Geophysics 2, Geophysical Fluid Dynamics, Haupstudium, Diplom Geophysik, (3 hours + 2 hours exercises)

45. 2006 Summer, Introduction to Geophysics, Diplom Geophysik, (2 hours)

46. 2005 Winter, Geophysics 1, Geophysics of the Earth, Haupstudium, Diplom Geophysik, (3 hours + 2 hours exercises)

47. 2003, Selected Topics in Space Physics, Lecture Series, Johns Hopkins University, (2 hours)