

Publications and Presentations

Prof. Dr. Peter Wurz

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Refereed Journals:

- [563] M. Yamauchi, S. Christon, I. Dandouras, S. Haaland, D. Kastinen, L.M. Kistler, I. Mann, S. Nozawa, J.M.C. Plane, Y. Saito, L. Schulz, S. Watababe, P. Wurz, and A.W. Yau, "**Metallic and molecular ions in the magnetosphere,**" Sp. Sci. Rev. (2024), submitted
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- [556] A. Vorburger, P. Wurz, R. Heled, and O. Mousis, "**Mass Spectrometer Experiment for a Uranus Probe,**" Plan. Sci. Jou. (2024), submitted, DOI: xxx.
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Oral Presentations:

- [2241] **"Sample Handling Concept for in-situ Lunar Regolith Analysis by Laser-Based Mass Spectrometry,"** talk at the *IEEE Aerospace Conference*, Big Sky, MN, USA, 4 March 2024.
- [223] **"Mass Spectrometric Measurements on Interstellar Probe,"** talk at the *IEEE Aerospace Conference*, Big Sky, MN, USA, 4 March 2024.
- [222] **"Mass Spectrometry Techniques for Characterising the Galilean Moons' Habitability,"** invited keynote at the workshop of the *Origins and Habitability of the Galilean Moons*, Marseille, France, 24–26 October 2023.
- [221] **"Die aktuelle Erforschung des Jupitermondes Europa,"** talk at *Astronomische Vereinigung St. Gallen*, St. Gallen, Switzerland, 22 June 2023.
- [220] **"Die aktuelle Erforschung des Jupitermondes Europa,"** talk at *Tofwerk AG*, Thun, Switzerland, 9 May 2023.
- [219] **"3D Monte Carlo Simulation of Ganymede's Atmosphere - Lessons Learned from Juno's Ganymede flyby,"** talk at the *EGU General Assembly*, 23–28 April 2023, Vienna, Austria.
- [218] **"Composition Measurements of Uranus' Atmosphere,"** talk at the *EGU General Assembly*, 23–28 April 2023, Vienna, Austria.
- [217] **"Die JUICE Mission der ESA,"** talk at the JUICE launch event *University of Bern*, Bern, Switzerland, 13 April 2023.
- [216] **"Space Weathering of Planetary Surfaces,"** Invited talk at the *Deutsche Physikalische Gesellschaft Spring Meeting*, Dresden, Germany, 27 March 2023.
- [215] **"History of Space Research at the University of Bern,"** talk at the visit of the US ambassador *University of Bern*, Bern, Switzerland, 23 March 2023.
- [214] **"Search for Life in the Solar System by Mass Spectrometry,"** seminar talk at the *University of Zurich*, Zürich, Switzerland, 17 March 2023.
- [213] **"In Situ Lunar Regolith Analysis by Laser-Based Mass Spectrometry,"** talk at the *IEEE Aerospace Conference*, Big Sky, MN, USA, 5 March 2023.
- [212] **"Die Suche nach Spuren von Leben im Sonnensystem,"** talk at the *Astronomischen Gesellschaft Urania Zuerich*, 7 October 2022, Zürich, Switzerland.
- [211] **"Measurement of the composition of the interstellar cloud,"** talk at the *COSPAR 2022 44th Scientific Assembly*, 16–24 July 2022, Athens, Greece.
- [210] **"Composition Measurements of Uranus' Atmosphere,"** talk at the *Workshop on In Situ Exploration of the Giant Planets II*, 12–14 July 2022, Laurel, MD, USA (virtual).
- [209] **"Laser Ablation / Ionisation Mass Spectrometry,"** keynote talk at the *15th European Workshop on Laser Ablation*, Bern, Switzerland, 12–14 July 2022.
- [208] **"Measuring the Composition of Mars' Atmosphere,"** talk at the *Sino-Swiss Space Science and Technology Cooperation Online Meeting*, Verkehrshaus Luzern, Switzerland, 30 June 2022.
- [207] **"Identifying Biosignatures on Planetary Surfaces with Laser-Based Mass Spectrometry,"** talk at the *IEEE Aerospace Conference*, Big Sky, MN, USA, 6 March 2022.

- [206] **“How do the surface composition, mineralogy, and physical conditions affect the surface release processes and particle environment?”** invited talk at the *Mercury’s Surface Response to the Interplanetary Environment*, virtual, 24 January 2022.
- [205] **“Laser-Induced Mass Spectrometry,”** invited plenary talk at the *Winter Conference on Plasma Spectrochemistry*, Tuscon, Arizona, USA, 20 January 2022.
- [204] **“Search for Signatures of Life with Laser-Based Mass Spectrometry,”** seminar talk at the *Aalto University*, Finland, virtual, 12 January 2022.
- [203] **“Measurement of Io’s Atmosphere during the IVO Mission,”** talk at the *12th Moscow Solar System Symposium*, Moscow, Russia, 11–15 October 2021, virtual.
- [202] **“Theory and Laboratory Experiments for Ion Sputtering of Lunar Soil,”** seminar talk at the *Taiwan Space Union*, virtual, 16 September 2021.
- [201] **“Investigation of the Surface Composition by Laser Ablation/Ionization Mass Spectrometry,”** talk at the *Lunar Surface Science Workshop: Fundamental and Applied Lunar Surface Research in Physical Sciences*, virtual, 18–19 August 2021.
- [200] **“Measurement of the composition of the interstellar cloud,”** talk at the *Observatory for the Outer Heliosphere and Boundaries*, virtual, 21–23 July 2021.
- [199] **“Investigation of the Surface Composition by Laser Ablation/Ionisation Mass Spectrometry,”** talk at the *IEEE Aerospace Conference*, virtual, 6–20 March 2021.
- [198] **“A novel and compact laser desorption - mass spectrometry system for sensitive in situ detection of amino acids on extraterrestrial surfaces,”** talk at the *11th Moscow Solar System Symposium*, Moscow, Russia, 5–9 October 2020, virtual.
- [197] **“Mercury’s Sodium Exosphere: Interpretation of MESSENGER Observations,”** talk at the *European Planetary Science Congress, EPSC meeting 2020*, 21 September – 11 October 2020, virtual.
- [196] **“Review of ion sputtering on planetary regolith surfaces,”** talk at the ISSI Workshop on *Surface Bounded Exospheres and Interactions in the Solar System*, Bern, Switzerland, 20–24 January 2020.
- [195] **“Modelling of Exospheric ionisation and its role for populating Mercury’s magnetosphere,”** talk at the ISSI Workshop on *Surface Bounded Exospheres and Interactions in the Solar System*, Bern, Switzerland, 20–24 January 2020.
- [194] **“Das Sonnenwindsegel und seine Bedeutung für die Weltraumforschung,”** talk at the *Medienkonferenz Rendez-vous Bundesplatz 2019*, Bern, Switzerland, 18 October 2019.
- [193] **“Measurement of the Composition of Venus Atmosphere during Aerobreaking,”** talk at the *10th Moscow Solar System Symposium*, Moscow, Russia, 7–11 October 2019.
- [192] **“In Situ Detection of Extinct or Extant Life on Planetary Surfaces,”** invited talk at the *Goldschmidt Conference*, Barcelona, Spain, 18–23 August 2019.
- [191] **“Spacecraft Outgassing - A Largely Underestimated Phenomenon,”** invited talk at the *14th International Conference on Vacuum Science and Engineering Application*, Shenyang, China, 5 August 2019.
- [190] **“Mass Spectrometric Investigations of the Atmospheres of Giant Planets,”** invited talk at the Short Course of the *16th International Planetary Probe Workshop*, Oxford, United Kingdom, 7 July 2019.
- [189] **“Die Erforschung der Jupitermonde,”** talk at the *Space Village*, 50th Anniversary of Apollo 11, Bundesplatz, Bern, Switzerland, 30 June 2019.

- [188] **“Uni Bern: Unsere Präsenz im Weltall,”** talk at the *Schweiz im All*, 50th Anniversary of Apollo 11, Kursaal, Bern, Switzerland, 29 June 2019.
- [187] **“Heavy Ion Composition of Mercury’s Magnetosphere,”** talk at the General Assembly of the *European Geosciences Union General Assembly*, Vienna, Austria, 7–12 April 2019.
- [186] **“Die BepiColombo Mission, und der Schweizer Beitrag,”** talk at the *Schweizer Astronomische Gesellschaft*, 6 April 2019, Schwanden ob Sigriswil, Switzerland.
- [185] **“Mass Spectrometric Investigations of the Atmospheres of Giant Planets,”** invited talk at the *Workshop on In Situ Exploration of the Ice Giants*, 25–27 February 2019, LAM, Marseille, France.
- [184] **“Die aktuelle Erforschung des Jupitermondes Europa,”** talk at the *Österreichisch-Schweizerische Kulturgesellschaft Zürich*, 12 February 2019, Zürich, Switzerland.
- [183] **“In situ detection of extinct and extant microbial life on planetary surfaces,”** seminar talk at the *School of Earth and Environmental Sciences*, University of Manchester, 29 January 2019, Manchester, UK.
- [182] **“In situ detection of extinct and extant microbial life on planetary surfaces,”** invited and highlighted talk at the *American Geophysical Union* fall meeting, 10–14 December 2018, Washington DC, USA.
- [181] **“Die aktuelle Erforschung des Jupitermondes Europa,”** talk at the *Naturwissenschaftliche Gesellschaft Thun*, 6 November 2018, Thun, Switzerland.
- [180] **“Surface Release Processes to Populate Mercury’s Exosphere,”** talk at the *9th Moscow Solar System Symposium*, 8 - 12 October 2018, IKI, Moscow, Russia.
- [179] **“Spatially resolved chemical analysis using a miniature LIMS system designed for in situ analysis of the lunar surface,”** talk at the *9th Sino-Swiss Space Science Workshop*, 13–14 September 2018, NSSC, Beijing, China.
- [178] **“Spatially resolved chemical analysis using a miniature LIMS system designed for in situ analysis of the lunar surface,”** invited talk at the *International Symposium on Lunar and Planetary Science*, 13 – 15 June 2018, Macau University of Science and Technology, Macau.
- [177] **“Ganymede’s exosphere and its interaction with the surface and magnetosphere: Current knowledge and perspectives for future missions,”** invited talk at the 15th Annual Meeting of the *Asia Oceanic Geoscience Society*, 3 – 8 June 2018, Honolulu, Hawaii, USA.
- [176] **“Surfaces Release Processes to Populate Mercury’s Exosphere,”** talk at the 15th Annual Meeting of the *Asia Oceanic Geoscience Society*, 3 – 8 June 2018, Honolulu, Hawaii, USA.
- [175] **“In situ detection of extinct or extant microbial life on planetary surfaces,”** talk at the *Technologies and Infrastructures Workshop for Planetary Exploration 2061*, 23–25 April 2018, EPFL, Lausanne, Switzerland.
- [174] **“The Neutral Gas and Ion Mass Spectrometer of the PEP Experiment on the JUICE Mission,”** talk at the *European Geosciences Union General Assembly* 8–13 April 2018, Vienna, Austria.
- [173] **“Scientific performance of the Gas Chromatograph Neutral Gas Mass Spectrometer for the Luna-Resurs Mission,”** talk at the *European Geosciences Union General Assembly* 8–13 April 2018, Vienna, Austria.
- [172] **“Interaction of Jupiter’s Plasma with the Galilean Moons,”** talk at the *8th Moscow Solar System Symposium* 9–13 October 2017, IKI, Moscow, Russia.

- [171] **“The Moon Viewed in ENAs: Review of the Science Learned from SARA/CENA on Board Chandrayaan-1,”** talk at the 14th annual meeting of the *Asia Oceania Geosciences Society (AOGS)*, 6–11 August 2017, Singapore.
- [170] **“Chemical composition of the semi-volatile grains of comet 67P/Churyumov-Gerasimenko,”** talk at the 14th annual meeting of the *Asia Oceania Geosciences Society (AOGS)*, 6–11 August 2017, Singapore.
- [169] **“Kommunikation in Astronomischen Dimensionen: Kontakt zu Interplanetaren Sonden,”** talk at the *Nacht mit Albert*, 2 June 2017, Bernisches Historisches Museum, Bern, Switzerland.
- [168] **“Chemical composition of the semi-volatile grains of comet 67P/Churyumov-Gerasimenko,”** talk at the *EGU General Assembly*, 23–28 April 2017, Vienna, Austria.
- [167] **“In situ mass spectrometry of planetary surfaces,”** talk at the *NCCR PlanetS General Assembly* 23–27 January 2017, Grindelwald, Switzerland.
- [166] **“Chemical composition of the semi-volatile grains of comet 67P/Churyumov-Gerasimenko,”** talk at the *7th Moscow Solar System Symposium* 10–14 October 2016, IKI, Moscow, Russia.
- [165] **“A Descent Probe for Europa and the other Galilean Moons of Jupiter,”** talk at the *13th International Planetary Probe Workshop*, 13–17 June 2016, APL, Maryland, USA.
- [164] **“Investigating the Heliospheric Boundary at Energies down to 10 eV with Neutral Atom Imaging by IBEX,”** talk at the *15th Annual International Astrophysics Conference*, 3–8 April 2016, Cape Coral, Florida, USA.
- [163] **“The Europa Descent Probe,”** talk at the workshop on *Europa Initiative*, 23 February 2016, IRAP, Toulouse, France.
- [162] **“Planned Measurement of Europa’s Exosphere with NIM / PEP on JUICE,”** talk at the workshop on *Towards a global unified model of Europa’s exosphere in view of the JUICE mission*, 13 October 2015, ISSI, Bern, Switzerland.
- [161] **“Volatiles in the Coma of comet Churyumov-Gerasimenko,”** talk at the *6th Moscow Solar System Symposium* 5–9 October 2015, IKI, Moscow, Russia.
- [160] **“Ursprung der Bausteine des Lebens,”** talk at the *Planetenjagd*, SCNAT Forschung Life Tournee, 5 September 2015, Universität Bern, Bern, Switzerland.
- [159] **“Observation of the local interstellar medium with the Interstellar Boundary Explorer (IBEX),”** invited talk at the *New Paradigms for the Heliosphere* meeting of the Deutsche Physikalische Gesellschaft, 29 June – 3 July 2015, Physikzentrum Bad Honnef, Germany.
- [158] **“Imaging the South Pole - Aitken Basin in Backscattered Energetic Neutral Hydrogen Atoms,”** talk at the *EGU General Assembly*, 12–17 April 2015, Vienna, Austria.
- [157] **“Early Activity of Churyumov-Gerasimenko: ROSINA/RTOF Results,”** talk at the *AGU Fall meeting*, 15–19 December 2014, San Francisco, CA, USA.
- [156] **“Measurement of the atmospheres of Europa, Ganymede, and Callisto,”** seminar talk at the *Physics Institute*, University of Bern, 1 October 2014, Bern, Switzerland.
- [155] **“Early Activity of comet Churyumov-Gerasimenko: ROSINA/Rosetta in situ Measurements of the Coma,”** talk at the *5th Moscow Solar System Symposium: Moon and Mars exploration* 13–18 October 2014, IKI, Moscow, Russia.

- [154] **“Miniaturised laser-based mass spectrometer for in situ investigation of planetary bodies,”** talk at the *20th International Mass Spectrometry Conference* 24-29 August 2014, Geneva, Switzerland.
- [153] **“Measurement of the atmospheres of Europa, Ganymede, and Callisto,”** seminar talk at the *Institute for Applied Physics*, University of Bern, 9 May 2014, Bern, Switzerland.
- [152] **“Die Venus Atmosphäre - Ein extremer Treibhauseffekt,”** seminar talk at the *Astronomische Gesellschaft Luzern*, 14 April 2014, Luzern, Switzerland.
- [151] **“Measurement of Deuterium in the Local Interstellar Medium,”** talk at the *13th Annual International Astrophysics Conference*, 13 March 2014, Murtle Beach, SC, USA.
- [150] **“Measurement of the atmospheres of Europa, Ganymede, and Callisto,”** talk at the conference on *Exoclines III - The Diversity of planetary atmospheres*, 12 February 2014, Davos, Switzerland.
- [149] **“IBEX ENA Observations Review,”** talk at the workshop on *Heliosheath Processes and Structure of the Heliopause: Modeling Energetic Particles, Cosmic Rays, and Magnetic Fields*, 13 January 2014, ISSI, Bern, Switzerland.
- [148] **“Sputtering and space weathering of solar system surfaces,”** talk at the workshop on *Plasma Sources for Solar System Magnetospheres*, 23 September 2013, ISSI, Bern, Switzerland.
- [147] **“Investigation of the volatile species in the lunar soil,”** talk at *EGU General Assembly*, 12 April 2013, Vienna, Austria
- [146] **“CAMAM instrument suite for MarcoPolo-R mission to an asteroid,”** talk at *EGU General Assembly*, 11 April 2013, Vienna, Austria
- [145] **“Exo-Planetary Energetic Neutral Atoms,”** Invited talk at Heraeus seminar on *Plasma and Radiation Environment in Astrospheres and Implication for Habitability of Extrasolar Planets*, 10–15 März 2013, Physikzentrum, Bad Honnef, Germany.
- [144] **“Investigation of the atmospheres of Europa, Ganymede, and Callisto with PEP/JUICE,”** Talk at symposium on *Ganymede Lander: scientific goals and experiments*, 7 März 2013, IKI, Moscow, Russia.
- [143] **“Die Suche nach Leben auf dem Mars,”** Seminar talk at *Physik am Freitag*, 1 März 2013, Universität Bern, Switzerland.
- [142] **“Morphology and chemical composition of asteroid’s regolith by CAMAM instrument suite combining a microscope and laser mass analyser,”** talk at the workshop on *Astrobiological and cosmochemical implications of Marco Polo-R sampling of a primitive asteroid*, 16–17 January 2013, Barcelona, Spain.
- [141] **“Solar Wind Interaction with the Lunar Surface: SARA/Chandrayaan-1 Results,”** talk at the workshop on *Kinetic Plasma Processes at Airless Bodies*, 13 November 2012, ISSI, Bern, Switzerland.
- [140] **“Planetary Instrumentation - In Situ,”** lecturer at *Summer School Alpbach 2012*, 24 July - 2 August 2012, Alpbach, Austria.
- [139] **“Interstellar Hydrogen Gas Entering the Heliosphere: Four Years of IBEX,”** talk at *39th COSPAR Scientific Assembly*, 14–22 July 2012, Mysore, India.
- [138] **“ENA Observations in the Solar System,”** invited talk at *39th COSPAR Scientific Assembly*, 14 - 22 July 2012, Mysore, India.

- [137] **“A miniature laser-ablation time-of-flight mass spectrometer for sub-ppm composition analysis of planetary surfaces,”** talk at *39th COSPAR Scientific Assembly*, 14 - 22 July 2012, Mysore, India.
- [136] **“Energetic Neutral Atom Observations of the Solar Wind Interaction with the Lunar Surface by SARA / Chandrayaan-1,”** invited talk at *39th COSPAR Scientific Assembly*, 14–22 July 2012, Mysore, India.
- [135] **“Mass spectrometric investigation of the atmospheres of giant planets,”** invited talk at *9th International Planetary Probe Workshop*, 18 - 22 June 2012, Toulouse, France.
- [134] **“Composition measurements from SOHO: Minor Ions,”** talk at *workshop on Advancing Our Understanding of Solar Wind Fractionation*, 1 May 2012, ISSI, Bern, Switzerland.
- [133] **“Die aktuelle Erforschung des Planeten Merkur,”** seminar talk at the *Astronomische Gesellschaft Bern*, 17 April 2012, Bern, Switzerland.
- [132] **“BepiColombo - Europas Raumsonde auf dem Weg zum Merkur,”** seminar talk at the *Schweizerische Raumfahrt-Vereinigung*, 4 April 2012, Bern, Switzerland.
- [131] **“Direct Sampling of the Interstellar Gas with IBEX,”** seminar talk at the *ESTEC Research and Scientific Support Department*, 20 January 2012, ESA/ESTEC, Noordwijk, The Netherlands.
- [130] **“The present Exploration of Planet Mercury,”** invited talk at the *Schweizerische Gesellschaft für Astrophysik und Astronomie*, General Assembly 2011, 21 October 2011, Versoix, Switzerland.
- [129] **“Solar Wind Interaction with the Lunar Surface: SARA/Chandrayaan-1 Results,”** talk at the *2nd Moscow Solar System Symposium: Moon of Planets*, 10–14 October 2011, Moscow, Russia.
- [128] **“A miniaturised laser-ablation time-of-flight mass spectrometer for sub-ppm analysis of planetary surfaces,”** talk at the *European Planetary Science Congress, EPSC-DPS Joint meeting 2011*, 3–7 October 2011, Nates, France.
- [127] **“Observation of the Interstellar Neutral Gas Flow with the Interstellar Boundary Explorer (IBEX),”** invited talk at the *Cosmic Rays in the Heliospheric Plasma Environment* conference, 12–16 September 2011, Bochum, Germany.
- [126] **“The Combined Effect of Physical and Chemical Processes on the Release of Particles into the Exosphere,”** talk at *Hermean Environment Working Group* workshop, 12–16 June 2011, Porto Venere, Italy.
- [125] **“Lunar Oxygen ENAs Observed by IBEX-Lo,”** talk, *IBEX 12th Science Working Team Meeting*, 19 April 2011, University of New Hampshire, Durham, NH, USA.
- [124] **“Die aktuelle Erforschung des Planeten Merkur,”** invited talk, 30 March 2011, ISSI, Bern, Switzerland.
- [123] **“Possible Detection of Water in the Exosphere of (21) Lutetia,”** talk at *AGU Fall Meeting*, 12 – 19 December 2010, San Francisco, CA, USA.
- [122] **“The Combined Effect of Physical and Chemical Processes on the Release of Particles into the Exosphere,”** invited talk at *Exploring Magnetosphere-Exosphere Coupling At Mercury: A Joint MESSENGER & BepiColombo Workshop*, 2 – 5 November 2010, Laboratory for Atmospheric and Space Physics (LASP), University of Colorado, Boulder, CO, USA.
- [121] **“Mercury’s Surface Composition,”** talk at *STROFIO Science Meeting*, 1 November 2010, Southwest Research Institute, Boulder, CO, USA

- [120] **“Chemical Analysis of Solids by Miniature Laser-Ablation TOF MS Designed for Space Research,”** talk at *The First Moscow Solar System Symposium*, 14 October 2010, IKI, Moscow, Russia.
- [119] **“In Situ Mass Spectrometric Analysis in Planetary Science,”** talk at *The First Moscow Solar System Symposium*, 14 October 2010, IKI, Moscow, Russia.
- [118] **“Lunar ENAs: IBEX-Lo observations and implications,”** talk at *IBEX 11th Science Working Team Meeting*, 16 September 2010, SwRI, Boulder, CO, USA.
- [117] **“Surface Composition Model,”** talk at *Hermian Environment Working Group meeting*, 26 August 2010, Visby, Sweden
- [116] **“Gas Background: The Rosetta Experience,”** talk at *STROFIO Science Meeting*, 14 June 2010, Goddard Space Flight Center, NASA, Greenbelt, MD, USA
- [115] **“ENA Observations from the Near-Earth Environment,”** invited talk at *EGU General Assembly*, 7 May 2010, Vienna, Austria
- [114] **“Comparative Planetology using Planetary Atmospheres,”** invited talk at *EGU General Assembly*, 5 May 2010, Vienna, Austria
- [113] **“Mercury’s exosphere from sputtering and micrometeoroid impact,”** invited talk at *5th European Strategic Meteor Workshop*, 12 November 2009, Austrian Academy of Sciences, Space Research Institute, Graz, Austria
- [112] **“Observations of lunar ENAs with IBEX-Lo,”** talk at *IBEX 9th Science Working Team Meeting*, 4 November 2009, Adler Planetarium, Chicago, USA.
- [111] **“Weltraumforschung, eine wahrhaft interdisziplinäre Wissenschaft,”** talk at *Gymnasiallehrer Fortbildung*, 31 October 2009, Physikalisches Institut, Universität Bern, Bern, Switzerland.
- [110] **“Detection of neutral atoms: Space measurements and laboratory data,”** talk at workshop on *Nano Dust in the Solar System: Formation, Interactions and Detection*, 21 September 2006, ISSI, Bern, Switzerland.
- [109] **“Velocity distributions of exospheric particles,”** talk at the *European Planetary Science Congress 2009*, 17 September 2009, Potsdam, Germany.
- [108] **“Venus Express—Die europäische Mission zur Venus,”** seminar talk at the *Astronomischer Verein Basel*, 9 September 2009, Basel, Switzerland.
- [107] **“The STROFIO ion source: Progress June 2009,”** talk at the *SERENA – HEWG meeting*, 9 June 2009, Mykonos, Greece.
- [106] **“Comparison of measurements and simulations of Mercury’s exosphere,”** talk at the *SERENA – HEWG meeting*, 8 June 2009, Mykonos, Greece.
- [105] **“Meteoriten, die Weltraumforschung des armen Mannes,”** talk at the *Nacht der Sterne*, 4 April 2009, Burgdorf, Switzerland.
- [104] **“Der Komet der aus der Kälte kam,”** talk at the *Nacht der Sterne*, 4 April 2009, Burgdorf, Switzerland.
- [103] **“Wie funktioniert eigentlich die Sonne,”** talk at the *Nacht der Sterne*, 4 April 2009, Burgdorf, Switzerland.
- [102] **“Comparison of measurements and simulations of Mercury,”** talk at the *EGU General Assembly*, 21 April 2009, Vienna, Austria.
- [101] **“In Situ Composition Analysis of Planetary Surfaces by Laser-Based Mass Spectrometry,”** talk at the *International workshop Europa Lander: Science Goals and Experiments*, 9–13 February 2009, Moscow, Russia.

- [100] **“Venus Express—The European Venus Mission,”** seminar talk at *Max Planck Institut für Chemie*, 20 October 2008, Mainz, Germany.
- [99] **“P-BACE instrument and first results,”** invited talk at *MEAP/P-BACE Day*, 9 October 2008, Kiruna, Sweden.
- [98] **“Venus Express,”** seminar talk at *Astronomische Gesellschaft Bern*, 27 August 2008, Bern, Switzerland.
- [97] **“Energetic Neutral Atoms from the Heliosheath,”** talk at *COSPAR 37th Scientific Assembly*, 17 July 2008, Montreal, Canada.
- [96] **“ENA Observation Techniques for Heliospheric Research,”** invited talk at *COSPAR 37th Scientific Assembly*, 16 July 2008, Montreal, Canada.
- [95] **“Tailward Flow of Energetic Neutral Atoms at Mars and Venus,”** talk at *COSPAR 37th Scientific Assembly*, 15 July 2008, Montreal, Canada.
- [94] **“Bern greift nach den Sternen—Die Reise zum Ursprung des Sonnensystems,”** invited talk at *ESPACE Mittelland*, 2 July 2008, Bern, Switzerland.
- [93] **“Energetic Neutral Atoms from the Termination Shock Region,”** talk at *IBEX SWT*, 20 June 2008, Boston, USA.
- [92] **“Energetic Neutral Atoms from the Termination Shock Region,”** talk at *EGU General Assembly*, 14 April 2008, Vienna, Austria.
- [91] **“Mars Express: Die europäische Mission zum Planeten Mars,”** talk at the Lions Club Bern, 19 November 2007, Bern, Switzerland.
- [90] **“Solar Wind Composition,”** seminar talk at the Physics Institute, University of Basel, 1 November 2007, Basel, Switzerland.
- [89] **“Planetary Mass Spectrometry,”** talk at 25th meeting of the *Swiss Group of Mass Spectrometry*, 24 October 2007, Beatenberg, Switzerland.
- [88] **“Modelling the Hermean Exosphere,”** invited talk at *EGU General Assembly*, 18 April 2007, Vienna, Austria.
- [87] **“Planetary Mass Spectrometry,”** invited talk at *Future Perspectives of Space Plasma and Particle Instrumentation and International Collaborations*, 1 November 2006, Rikkyo University, Tokyo, Japan.
- [86] **“Energetic Hydrogen and Oxygen Atoms at the Nightside of Mars,”** talk at *European Planetary Science Congress, EPSC 2006*, 19 September, Berlin, Germany.
- [85] **“Planetary and Heliospheric ENAs,”** invited talk at *Asia Oceania Geosciences Society 3rd Annual Meeting*, 11 July 2006, Singapore.
- [84] **“Changes of the surface composition as a result of sputtering,”** talk at *Mercury Workshop*, 27 June 2006, ISSI, Bern, Switzerland.
- [83] **“Energetic Neutral Atoms from the Termination Shock Region,”** talk at the IGPP meeting on *Physics of the Inner Heliosheath: Voyager Observations, Theory, and Future Prospects*, 7 March 2006, Oahu, Hawaii, USA.
- [82] **“Experimentelle Weltraumforschung,”** seminar talk at *Physik am Samstag*, University of Bern, 28 January 2006, Bern, Switzerland.
- [81] **“The Laser Mass Spectrometer,”** talk at Swiss Space Office, 13 January 2006, Bern, Switzerland.
- [80] **“BepiColombo: The European Mission to Mercury,”** seminar talk at Inficon, 10 January 2006, Balzers, Lichtenstein.

- [79] **“Particle Scattering off Surfaces: Application in Space Science,”** invited talk at the 5th International Symposium on *Atomic Level Characterizations for new Materials and Devices*, 5 December 2005, Kono, Hawaii, USA.
- [78] **“The ROSINA Neutral Gas Mass Spectrometer on Rosetta,”** talk at the *Mars Escape and Magnetic Orbiter* meeting, 28 November 2005, Paris, France.
- [77] **“Teilchenstreuung an Oberflächen und deren Anwendung in der Weltraumforschung,”** seminar talk at the Institut für Physik, Humbolt-Universität zu Berlin, 9 November 2005, Berlin, Germany.
- [76] **“Investigation of the Interstellar Neighbourhood of our Solar System: Present and Future Research,”** seminar talk at the Centre de Recherches en Physique des Plasmas, EPFL, 7 November 2005, Lausanne, Switzerland.
- [75] **“Solar Wind Composition,”** invited talk at the European SPM-11 conference on *The Dynamic Sun: Challenges for Theory and Observations*, 16 September 2005, Leuven, Belgium.
- [74] **“Experimentelle Weltraumforschung,”** talk at the Rotary Club, Bern, Switzerland, 12 April 2005.
- [73] **“Der Sonnenwind: Messungen im Weltraum und deren Vorbereitung im Labor,”** seminar talk at the University of Giessen, Germany, 16 November 2004.
- [72] **“Planet Merkur—Von Einstein bis heute,”** talk at Herbsttagung Atag, Basel, Switzerland, 21 October 2004.
- [71] **“Simulation of Surface gas Release Processes,”** invited talk at the ESF workshop on *Modelling of the Mercury environment: Where are we before BepiColombo*, Kiruna, Sweden, 10 August 2004.
- [70] **“ICMEs with unusual, mass-fractionated composition,”** invited talk at 35th COSPAR Scientific Assembly, Paris, France, 20 July 2004.
- [69] **“Deriving the surface composition from particle measurements in orbit around Mercury,”** talk at 35th COSPAR Scientific Assembly, Paris, France, 20 July 2004.
- [68] **“Mars Express: Die europäische Mission zum Planeten Mars,”** seminar talk at the University of Essen, Germany, 15 June 2004.
- [67] **“Correlation of solar EUV and Lyman- α radiation,”** talk at the *3D Irradiance workshop*, ISSI, Bern, Switzerland, 1 June 2004.
- [66] **“Mars Express: Die Europäische Mission zum Mars,”** invited talk at Technische Vereinigung Zug, Zug, Switzerland, 25 March 2004.
- [65] **“Die Mars Express Mission mit zwei Berner Experimenten,”** invited talk at Kiwanis Club, Bern, Switzerland, 25 February 2004.
- [64] **“Mass-Spectrometric Analysis on Surfaces of Solar System Bodies,”** seminar talk at Department of Geosciences, Princeton University, Princeton, NY, USA, 17 February 2004.
- [63] **“Evidence for a Secondary Stream of Neutral Fluxes at 1 AU,”** talk at IGPP 3rd Annual International Astrophysics Conference “Physics of the Outer Heliosphere”, Riverside, CA, USA, 10 February 2004.
- [62] **“Characteristics and constraints on a secondary interstellar neutral stream,”** talk at EGS-AGU-EUG Joint Assembly, Nice, France, 8 April 2003.
- [61] **“Massenspektrometrie im Weltraum,”** invited talk at 67. Physikertagung der Deutschen Physikalischen Gesellschaft, Hannover, Germany, 24 March 2003.

- [60] **“Science Fiction heute — Realität morgen,”** invited talk at EMPA Akademie, Dübendorf, Switzerland, 2 Dezember 2002.
- [59] **“Heavy elements in the solar wind — Tracers for plasma physical processes in the solar atmosphere,”** colloquium at the Kiepenheuer-Institut für Sonnenphysik, Freiburg, Germany, 26 November 2002.
- [58] **“Schwere Ionen im Sonnenwind — Boten für plasmaphysikalische Prozesse in der Sonnenatmosphäre,”** invited talk at Astronomische Gesellschaft Bern, Switzerland, 19 November 2002.
- [57] **“The BepiColombo Mission of ESA to Mercury,”** colloquium at the Institute de Physique, Université de Neuchâtel, Switzerland, 28 October 2002.
- [56] **“Energetic Neutrals Atoms Measured with IMAGE/LENA,”** talk at ISSI workshop on the *Physical parameters of LIM through coordinated observations of the Gravitational Focusing cone at 1 AU*, 14 August 2002.
- [55] **“Energetic Neutrals Atoms Measured with IMAGE/LENA,”** talk at ISSI workshop on the *Physics of the Heliotail*, 15 July 2002.
- [54] **“The Laser Mass Spectrometer for the Lander on BepiColombo,”** talk at ESA Science and Technology Center, Noordwijk, The Netherlands, 3 July 2002.
- [53] **“Monte-Carlo Simulation of Mercury’s Exosphere,”** talk at EGS XXVII General Assembly, Nice, France, 25 April 2002.
- [52] **“BepiColombo: Die geplante Mission der Europäischen Weltraum Organisation zum Planet Merkur,”** invited talk at Astronomische Gesellschaft Bern, Schweiz, 12 June, 2001.
- [51] **“Fast MCP detectors for time-of-flight instrumentation,”** talk at EGS XXVI General Assembly, Nice, France, 28 March 2001.
- [50] **“Measurement of the Ar/Ca abundance ratio from CELIAS/MTOF in slow and fast solar wind,”** talk at EGS XXVI General Assembly, Nice, France, 26 March, 2001.
- [49] **“Ca elemental abundance from CELIAS/MTOF in slow and fast solar wind,”** talk at EGS XXVI General Assembly, Nice, France, 26 March 2001.
- [48] **“Composition of Magnetic Cloud Plasmas during 1997 and 1998,”** talk at AGU Fall Meeting, San Francisco, CA, USA, December 15–19, 2000.
- [47] **“Experience from IMAGE/LENA,”** talk at the workshop on ENA measurements at Mercury, Rome, Italy, December 7, 2000.
- [46] **“Methods of LENA detection,”** invited talk at Istituto di Fisica dello Spazio Interplanetario, Consiglio Nazionale delle Ricerche, Rome, Italy, 5 December 2000.
- [45] **“Recent results from IMAGE/LENA,”** invited talk at Istituto di Fisica dello Spazio Interplanetario, Consiglio Nazionale delle Ricerche, Rome, Italy, 4 December 2000.
- [44] **“Fernerkundung von Merkurs Exosphäre,”** seminar talk at Physikalisches Institut, Universität Bern, Switzerland, 20 November 2000.
- [43] **“Remote sensing via energetic neutral atoms,”** four invited lectures at the Master’s Course for Space Technology, Swedish Institute of Space Physics, Kiruna, Sweden, October 31 – November 1, 2000.
- [42] **“Ordinary and extraordinary in situ composition of CME-related solar wind and SEPs,”** talk at EGS XXV General Assembly, Nice, France, 29 April 2000.
- [41] **“Particle populations in Mercury’s magnetosphere,”** invited talk at EGS XXV General Assembly, Nice, France, 26 April 2000.

- [40] **“Modellierung der Massenfraktionierung im koronalen Massenauswurf von 6. Januar 1997,”** seminar talk at Physikalisches Institut, Universität Bern, Switzerland, 12 April 2000.
- [39] **“Die äußere Heliosphäre: Messungen am lokalen interstellaren Gas,”** invited talk at University of Bern, Bern, Switzerland, 2 December 1999.
- [38] **“Neutral Gas Mass Spectrometry,”** two invited lectures at the Master’s Course for Space Technology, Swedish Institute of Space Physics, Kiruna, Sweden, 18 October 1999.
- [37] **“Theoretical model for the mass fractionation in the January 6, 1997, coronal mass ejection,”** talk at the 7th CELIAS workshop, Couvet, Switzerland, 13 October 1999.
- [36] **“Ca Elemental Abundance in Slow and Fast Solar Wind From SOHO/CELIAS/MTOF,”** AGU Spring Meeting, Boston, MA, USA, 1–4 June 1999.
- [35] **“Ca Elemental Abundance from CELIAS/MTOF in Slow and Fast Solar Wind,”** talk at the 24th General Assembly of the European Geophysical Society, The Hague, The Netherlands, 19–23 April 1999.
- [34] **“Nachweis von energetischen Neutralteilchen,”** invited talk at the DPG spring school, Bad Honnef, Germany, 12–16 April 1999.
- [33] **“The Iron, Silicon, and Oxygen Abundance in the Solar Wind Measured with SOHO/CELIAS/MTOF,”** talk at the AGU Fall meeting, San Francisco, CA, USA, 6–10 December 1998.
- [32] **“Satellitengestützte Sonnenwindforschung,”** invited talk at Kiwanis Club, Bern, Switzerland, 18 November 1998.
- [31] **“Der koronale Massenauswurf vom 6. Januar 1997,”** seminar talk at Physikalisches Institut, Universität Bern, Switzerland, 24 June 1998.
- [30] **“The Silicon, Oxygen, and Iron Abundance in the Solar Wind,”** talk at the 23rd General Assembly of the European Geophysical Society, Nice, France, 22 April 1998.
- [29] **“Elemental Composition Before, During, and After the January 6, 1997, CME Event Measured by CELIAS/SOHO”** talk at the 3rd CELIAS workshop, Solomons Island, Maryland, USA, 13 October 1997.
- [28] **“The Silicon and Oxygen Abundance in the Solar Wind Measured with CELIAS/MTOF,”** talk at the 22nd General Assembly of the European Geophysical Society, Vienna, Austria, 24 April 1997.
- [27] **“The O, Si, and Fe Abundance in the Solar Wind,”** talk at the 2nd CELIAS workshop, Schwefelbergbad, Switzerland, 8 March 1997.
- [26] **“Surface Ionization for Space Application,”** talk at the IMAGE Preliminary Design Review, Goddard Space Flight Center/NASA, Greenbelt, Maryland, USA, 7 January 1997.
- [25] **“The O/Si ratio in the Solar Wind,”** talk at the CELIAS workshop, Seon, Germany, 10 September 1996.
- [24] **“Anwendung der Oberflächenionisation für Weltraumexperimente,”** seminar talk at Physikalisches Institut, Universität Bern, Switzerland, 15 May 1996.
- [23] **“Surface Ionization for Space Application,”** seminar talk at Space and Atmospheric Physics Department, Imperial College, London, UK, 29 March 1996.
- [22] **“Laser-Anregung und Zerfall von C₆₀ Molekülen,”** invited talk at Institut für Kernphysik, Justus-Liebig-Universität Gießen, Germany, 14 March 1995.

- [21] **“Anregung, Ionisation und Fragmentation von Fullerenen,”** invited talk at Institut für Kernphysik, Justus-Liebig-Universität Gießen, Germany, 5 November 1994.
- [20] **“A Neutral Atom Imaging Mass Spectrometer,”** talk at the Austrian Space Agency’s summer school, Alpbach, Tirol, Austria, 30 July 1994.
- [19] **“Flugzeitmassenspektroskopie für Weltraummissionen,”** seminar talk at II. Physikalisches Institut, Justus-Liebig-Universität Gießen, Germany, 11 July 1994.
- [18] **“The CELIAS Experiment on the SOHO Mission: Mass Spectrometry of the Solar Wind,”** seminar talk at Materials Science/Chemistry Divisions, Argonne National Laboratory, USA, 5 July 1994.
- [17] **“Die SOHO Mission: Moderne Massenspektroskopie am Sonnenwind,”** seminar talk at Institut für Allgemeine Physik, Technische Universität Wien, Austria, 7 June 1994.
- [16] **“Die SOHO Mission: Moderne Massenspektroskopie am Sonnenwind,”** invited talk at Institut für Kernphysik, Justus-Liebig-Universität Gießen, Germany, 10 December 1993.
- [15] **“The HI-LITE Neutral Atom Imaging Mass Spectrometer,”** seminar talk at Materials Science/Chemistry Divisions, Argonne National Laboratory, USA, 11 June 1993.
- [14] **“Verwendung niederenergetischer Atome zur Abbildung des Ionenausflusses in die Magnetosphäre,”** talk at the spring meeting of the Swiss Physical Society, Neuchâtel, Switzerland, 26 March 1993.
- [13] **“Erzeugung, Darstellung und Massenspektroskopie von Fullerenen,”** seminar talk at Physikalisches Institut, Universität Bern, Switzerland, 18 November 1992.
- [12] **“Laserunterstützte Massenspektroskopie von Fullerenen,”** invited talk at Max-Planck-Institut für Plasmaphysik, Garching bei München, Germany, 6 July 1992.
- [11] **“Lasergestützte Massenspektroskopie von Fullerenen,”** invited talk at Fachbereich Physik, Universität Kaiserslautern, Germany, 4 July 1992.
- [10] **“Laserunterstützte Massenspektroskopie von Fullerenen,”** invited talk at Institut für Allgemeine Physik, Technische Universität Wien, Austria, 30 June 1992.
- [9] **“Fullerenes: Formation, Characterization and Photophysics,”** invited talk at Department of Physics, Northern Illinois University, DeKalb, IL, USA, 14 February 1992.
- [8] **“C₆₀: A New Form of Carbon,”** invited talk at 3rd European Vacuum Conference (EVC-3), Vienna, Austria, 23–27 September 1991.
- [7] **“Photodissociation of Neutral C₆₀ and C₇₀ Clusters,”** talk at second international workshop on Postionization Techniques in Surface Analysis (PITSA ‘91), Pennsylvania State University, USA, 15–17 May 1991.
- [6] **“Laser-Mehrphotonenionisation zum ultrasensitiven Nachweis von neutralen Teilchen: Realisation eines SNMS-ToF-Massenspektrometers,”** seminar talk at Institut für Allgemeine Physik, Technische Universität Wien, Austria, 29 May 1990.
- [5] **“Different Processes for Desorption of Ground- and Excited-State Atoms under Electron Bombardment of Alkali-Halides,”** talk at workshop on Desorption Induced by Electronic Transitions (DIET IV), Kranichberg, Austria, 2–4 October 1989.
- [4] **“Elektronen stimulierte Desorption von LiF,”** seminar talk at Institut für Allgemeine Physik, Technische Universität Wien, Austria, 17 January 1989.
- [3] **“ESD Thresholds for Excited Atoms Desorbed from Alkali-Halides,”** invited talk at Seventh International Workshop on Inelastic Ion Surface Collisions (IISC-88), Krakau, Poland, 19–23 September 1988.

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- [2] **“Desorption Studies on Alkali (Earth)-Halides under Ion and Electron Bombardment,”** invited talk at Jagelonian University, Krakow, at Seminar on Charged Particle Interaction with Surfaces, Krakow-Mogilany, Poland, 7–9 December 1987.
- [1] **“Bombardment of Alkali-Halides by Ions and Electrons,”** talk at Materials Modification by High Fluence Ion Beams, NATO Advanced Study Institute, Viano do Castelo, Portugal, August 24 – September 5, 1987.