

# PD Dr. Elena Kronberg

## Curriculum Vitae

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Citizenship: Germany



### Education

- 01/2019 **Habilitation**, Ludwig Maximilian University of Munich (LMU), Germany  
Research: “Charged particles in the terrestrial magnetosphere”
- 05/2006 **Dr. rer. nat.**, Technical University of Braunschweig, Germany  
Thesis title: “Dynamical processes in the Jovian magnetotail”
- 06/2001 **Master in Physics**, Altai State University (ASU), Barnaul, Russia  
Thesis title: “Stochastic dynamics of relativistic electrons in the vector-scalar wave field and in the static magnetic field”
- 06/1999 **Bachelor in Physics**, ASU, Barnaul, Russia  
Thesis title: “Stochastic dynamics of relativistic electrons in the upper-hybrid wave field and transverse magnetic field”

### Professional positions

- From 11/2023 **Heisenberg Research Group Leader**, Geophysics, Department of Earth and Environmental sciences, LMU, Munich  
Responsibility: Principal Investigator of the project “Energetic Ions in Space” (EIS) to understand dynamics of energetic plasma in the geospace using machine learning, statistical modeling and high performance simulations; leading a group on space plasma physics
- 01/2020–11/2023 **Scientist**, Geophysics, Department of Earth and Environmental sciences, LMU, Munich  
Responsibility: Principal Investigator of the project “Ions in near-Earth space” (IONS) to develop a predictive empirical model of the plasma pressure in the geospace environment using observations by ESA/Cluster mission; leader of the international project on “Energy transformation, turbulence and acceleration in space plasmas”  
09/2021–03/2022: **Parental leave**
- 04/2021–09/2021 **Guest Professor**, Geophysics, Department of Earth and Environmental sciences, LMU, Munich  
Responsibility: conduct science and teaching on the subject “Earth’s magnetic field”
- Since 04/2019 **Privatdozent**, Geophysics, Department of Earth and Environmental sciences, LMU, Munich
- 08/2015–12/2019 **Guest lecturer and scientist**, Geophysics, Department of Earth and Environmental sciences, LMU, Munich  
Responsibility: led courses on plasma physics with application to space weather; mentored Bachelor and Master students; developed and enhanced data analysis techniques based on the INTERMAGNET database, by including relevant physics needed to accurately characterize the geospace environment and the connection to the solar conditions

- 11/2006– **Scientist**, *Max Planck Institute for Solar System Research (MPS)*, Göttingen  
 12/2019 Responsibility: conducted and developed new data analysis techniques including machine learning of energetic particle population observed by ESA/Cluster/RAPID instrument enhanced by observations from other Cluster spacecraft instruments and multiple spacecraft missions to investigate the distribution, origin and energization of magnetospheric plasmas; developed predictive models of the space environment; led the preparation of data, documentation and software tools for community use integrated in Cluster Science Archive
- 05/2006– **Postdoctoral Researcher**, *MPS*, Katlenburg-Lindau  
 10/2006 Responsibility: explored Galileo observations to establish dynamics of the Jovian magnetosphere
- 09/2001– **Scientific assistant**,  
 12/2002 *Department of general physics, ASU*, Barnaul, Russia  
 Responsibility: conducted seminars at undergraduate level: informatics, general physics, optics

## Scientific achievements

- **Author of 123 peer-review publications**, 25 of which I am the first author, h-index 26 and >2156 citations (Web of Science, on 24.06.2026)
- **40 invited talks** to international conferences e.g., Workshop on GNSS Ionosphere (IWGI2026) – Remote Sensing Techniques and Applications (Neustrelitz, Germany); Deutsche Physikalische Gesellschaft (DPG)-Frühjahrstagung der Extraterrestrischen Physik (Göttingen, Germany); Magnetism Atmospheres Life (USA); “Current understanding of the geospace environment variations based on multi-spacecraft observations during solar cycle 24” ISSI-BJ (China, online); Frontiers Symposium (online); Ionosphere-Magnetosphere Coupling IV (Potsdam, Germany); Mini-Symposium at IRF (Sweden), SMILE mission Science Working Team #23, #18 and consortium #12, online, ESA; 16th Plasma Physics in the Solar System Conference (Russia); Impact of the Cold Plasma Populations in the Earth’s Magnetosphere (USA); the annual Institute of Plasma, 47th Plasma Physics Conference (UK); International Conference on Substorms (Norway, Austria); Ion Composition in the Sun-Earth System (USA); Keynote speaker at Royal Astronomical Society Specialist Discussion Meeting (UK); Japanese Geophysical Union Meeting (Japan); Cluster Workshop (France, Germany, Slovenia, USA, Greece), 2 times European Geophysical Union (EGU) General Assembly (Austria); Committee on Space Research (COSPAR) Assembly (USA, Russia, 4 times); Geospace Environment Modeling (GEM) Meeting (USA, 2 times); Asia Oceania Geosciences Society Meeting (Singapore, Australia); Western Pacific Geophysics Meeting (Taiwan); European Planetary Science Congress (Potsdam, Germany)
- **invited colloquiums** e.g., IWF, Graz, Austria; virtual Astrophysics Colloquium at University of Athens, Greece; INAF-IASF, Milan, Italy; GSI Helmholtzzentrum für Schwerionenforschung (Darmstadt), University of California Los Angeles, USA, online Cold Plasma Seminar Series, USA; the University of Rostock, the Arctic University of Norway, the University of Tokyo, Japan; the University of Illinois, USA; the University of West Virginia, USA; the University of Texas at Arlington, USA; Institute of Geology and Geophysics Chinese Academy of Sciences, China

- **Member of 7 International Space Science Institute (ISSI) Teams** (including giving invited presentations) led by
  - D. Turner and G. Reeves on “Understanding energetic particle injections and their effect on Earth’s outer radiation belt electrons using multipoint observations”,
  - by M. Balikhin on “Analysis of Cluster inner magnetosphere campaign Data, in application the dynamics of waves and wave-particle interaction within the outer radiation belt”,
  - by M. Vogt on “How does the solar wind influence the giant planet magnetospheres?”,
  - by F. Gastaldello on “Soft Protons in the Magnetosphere focused by X-ray Telescopes”;
  - by R. Ilie and R. Oran on “How Heavy Elements Escape the Earth: Past, Present, and Implications to Habitability”;
  - by E. Panov on “Magnetotail Dipolarizations: Archimedes Force or Ideal Collapse?”;
  - by N. Ganushkina and M. Liemohn on “1–100 keV Electrons in the Earth’s Magnetosphere: Unique and Unpredictable?”.
- **Member of GEM focus group** led by R. Chappell, B. Schunk and D. Welling on “The ionospheric source of magnetospheric plasma”

## --- Recognitions

- 2025 Co-Investigator (Co-I) of the Soft X-ray Imager (SXI) on SMILE mission, ESA
- 2024 Work on “A possible mechanism for the formation of an eastward moving auroral spiral” by Maetschke, Kronberg, et. al., 2023 was highlighted by ESA with a story “Cluster explains spiral dance seen over Norway”.
- 2015 Co-Investigator (Co-I) of the Turbulence Heating Observer (THOR)/Ion Mass Spectrometer (IMS) instrument
- 2012-2014 Leader of an International Space Science Institute (ISSI) Team on “Heavy ions: their dynamical impact on the magnetosphere”, Switzerland, Result: highly cited review in Space Science Reviews
- 2010 Co-I of the Cluster/RAPID instrument, Science Working Team, Belgium
- 2010 Team Achievement Award, RAPID Team, Cluster Workshop, Greece
- 2008 Work on “Comparison of periodic substorms at Jupiter and Earth” by Kronberg et al., 2008 was highlighted by ESA. This story was published in many public news portals, e.g., Space Daily.

## --- List of third-party funds raised

### **In total ~2.4MEuros:**

- 2026 “ATHENA Radiation Environment Models and X-ray Background Effects Simulators”, ESA, 3 months, 15,000 Euros
- 2024 “Soft proton flux analysis for SMILE”, ESA, 6 months, 25,774 Euros
- 2024 Two grants within Research Unit on “Magnetosphere, Ionosphere, Plasmasphere and Thermosphere, as a coupled system”: “Energy Deposition from the magnetotail into the ionosphere and thermosphere” and “Electron Seed Population and its impact on Ring current, Ionosphere and Thermosphere dynamics”, German Research Foundation (DFG), 2 PhD positions and scientific assistant, 4 years, 674,000 Euros

- 2024 Travel Grants for international collaborations: “A collaborative study on the establishment of basis for the hybrid simulation code development for understanding the dynamics of solar system radiation belts”, with Korea, 12,000 Euros; “Exploring the dynamics of charged particles in the near-Earth space: collaborative insights from Japanese and European satellite missions”, 7,000 Euros; “Cold ion outflow in the terrestrial magnetosphere”, 3,500 Euros
- 2023 Heisenberg grant, project “Energetic Ions in Space”, DFG, own position for 5 years, ca. 650,000 Euros
- 2023 Grant for the project “Understanding the Properties of Chorus Waves in the Earth’s Inner-magnetosphere and Their Effects on Van Allen Radiation Belt Electrons”, DFG, PostDoc position and scientific assistants, 2 years, 225,700 Euros
- 2020–2023 Grant for the project “Energy transformation, turbulence and acceleration in space plasmas” in the frame of a trilateral partnership between the Ukraine, Russia and Germany, Volkswagen Foundation, 294,000 Euros, hired 1 Post-Doc at the LMU
- 2020–2021 Travel grant from Bavaria California Technology Center, “Ionosphere-Magnetosphere coupling: combining spacecraft and ground based observations”, 8000 Euros
- 2020-2021 Equal opportunity in research and teaching at the LMU, 2 research assistants, 4340 Euros
- 2020-2022 Grant for the project “IONs in Near-earth Space”, DFG, within the focused area (SPP) “Dynamic Earth”, own position and scientific assistants, 3 years, 292,000 Euros)
- 2016-2019 Grant for the project “Energy transformation, turbulence and acceleration in space plasmas” in the frame of a trilateral partnership between the Ukraine, Russia and Germany, Volkswagen Foundation, 255,900 Euros, press release, e.g., Space Daily, published 23 Web of Science papers, hired 1 PostDoc at the MPS

## Services to the scientific community (selection)

- 2024 Evaluation for the Austrian Academy of Sciences
- since 2024 Deputy speaker of RU “Magnetosphere, Ionosphere, Plasmasphere and Thermosphere as coupled system (MIPT)”
- since 2023 Chair of the PhD defense committee of *Sandra Hahn* at the LMU; member of the PhD committees of *Artem Smirnov* at GFZ Potsdam, *Louis Richard* at Uppsala University (Sweden), *Marjolijn Adolfs* at the University of Potsdam, *Katyrina Lubyk* at the University of Rostock, *Martin Hosner* at the University of Graz
- since 2023 Topic Editor “Frontiers Space Physics”: “Energy Transfer And Exchange With Low-Energy Plasma Via Cross-Energy And Cross-Scale Interactions Throughout The Magnetosphere”
- since 2022 Associate Editor “Frontiers Space Physics”
- since 2022 Annales Geophysicae topical Editor for Magnetospheric Physics
- 2022-2024 Topic Editor “Frontiers Space Physics”: special issue on “Circulation of Heavy Ions and Their Role in Regulating the Near-Earth Plasma Dynamics”

- 2021-2022 Guest Editor in “Earth, Planets and Space”: special issue on “DynamicEarth: Earth’s interior, surface, ocean, atmosphere, and near space interactions”
- 2020-2024 Topic speaker of focused area (SPP) “Dynamic Earth”
- 2020-2022 Topic Editor “Frontiers Space Physics”: special issue on “Cold-Ion Populations and Cold-Electron Populations in the Earth’s Magnetosphere and Their Impact on the System”
- 2018–2019 Reviewer of the Rosetta Standard Radiation Environment Monitor (SREM) datasets for the ESA based Planetary Science Archive, European Space Astronomy Centre (ESAC)
- 2013–2025 Proposal Reviewer: NASA review panel, Swedish National Space Board, Kazakhstan National Centre of Science and Technology, Hungarian National Research Development and Innovation Office, Czech Science Foundation, German Research Foundation (Deutsche Forschungsgemeinschaft), Alexander von Humboldt Foundation (Germany), General Research Fund (Hong Kong)
- Since 2006 Referee for peer-review journals: J. of Geophysical Research, Geophysical Research Letters, Nature physics, Nature Communications, Planetary Space Science, Space Science Reviews, Ann. Geophysicae, Astrophysical Journal, Earth, Planets and Space, Advances in Space Research, Canadian Journal of Physics, Space Weather, RAS Techniques and Instruments

## --- Organisation of scientific meetings (selection)

- 2024 COSPAR, Scientific Organizing Committee, “Particle Transport Acceleration and Loss in the Earth and Planetary Magnetospheres”, Korea
- 2023 AGU, session co-convener, “Circulation of Heavy Ions and Their Role in Regulating Plasma Dynamics”, USA
- 2022 Cluster 22nd anniversary symposium, scientific committee, Germany
- 2022 AGU, session co-convener, “Circulation of Heavy Ions and their Role in Regulating the Near-Earth Plasma Dynamics”, USA
- 2022 EGU, session co-convener, ST2.5, “Wave-particle interactions in the Earth’s inner magnetosphere, radiation belt dynamics, and coupling”, Austria
- 2021 AGU, sessions co-convener, “SM006 “Cold plasmas in the magnetosphere-ionosphere system: drivers, impacts, open questions, new measurements techniques and new space missions” and SM004 “Circulation of Heavy Ions and their Role in Regulating the Near-Earth Plasma Dynamics”, USA
- 2021 EGU, sessions co-convener, ST2.4, “Wave-particle interactions in the Earth’s inner magnetosphere, radiation belt dynamics, and coupling” and ST2.6 “The ionospheric source of plasma: effects on the plasmasphere and magnetosphere”, Austria
- 2020 AGU, sessions co-convener, “Magnetosphere–Plasmasphere–Ionosphere Coupling: Transport of Ionospheric Ions to the Magnetosphere and Their Consequences” and “Understanding the Role of Heavy Ions and Plasma Convection in Regulating the Coupled Magnetosphere–Ionosphere Dynamics”, USA
- 2020 DGG, sessions convener, “Nature catastrophes”, “Extraterrestrial Physics”, Munich
- 2019 AGU, session co-convener, “Magnetosphere - Plasmasphere - Ionosphere coupling: transport of ionospheric ions to the magnetosphere and their consequences”, USA

- 2019 Cluster 29th workshop, scientific committee, 110 participants, Spain
- 2019 EGU, session co-convener, ST2.4, “Wave-particle interactions in the Earth’s magnetosphere and radiation belt dynamics”, ST2.5, “Magnetosphere - plasmasphere - ionosphere coupling: tracking of cold and heavy ionospheric ions and their impact on the magnetosphere”, Austria
- 2018 EGU, session co-convener, ST2.9, “Wave-particle interactions in the Earth’s magnetosphere and radiation belt dynamics”, Austria
- 2016 EGU, session co-convener, ST3.3, “The dynamical ionosphere”, Austria
- 2013 EGU, session convener, ST2.5, “Heavy ions and their dynamical impact on the magnetosphere”, Austria
- 2013 Cluster 23rd workshop, scientific committee, 120 participants, Norway
- 2012 AGU, session convener, SM016, “Planetary Ion Sources and Magnetospheric Impacts”, USA
- 2012 MPS Symposium, Germany
- 2010 11th CAA Cross-calibration meeting, Germany

## Public outreach

- 2017 Video for Eclipse de Sol 2017, La Escuela Superior de Fisica y Matematicas in Mexico City, to encourage young women in Mexico to explore scientific career
- 2005–2019 Guiding public tours, participation at the open house days at MPS

## Memberships

- Young Center for Advanced Studies (CAS) at LMU
- Deutscher Hochschulverband (DHV)
- European Geophysical Union (EGU)
- American Geophysical Union (AGU)
- International Astronomical Union (IAU)

## Administration

- 2016-2024 Administration of the project granted by Volkswagen Foundation

## Teaching

My teaching activities at LMU until present are:

- **Special topics in Space Plasma Physics** (MSc), 2 SWS, 14 seminars (2025 SS, 2025/2026 WS)  
Content: Plasma dynamics in the near-Earth space and applications of machine learning methods
- **Space weather** (MSc), 11 lectures + 3 tutorials (2016/2017 – 2023/2025 WS, excluding 2021/2022 due to parental leave)  
Content: space weather hazards, solar and solar wind dynamics, the magnetosphere and ionosphere with a focus on the cause of geomagnetic field disturbances  
Evaluation: (2016/2017: note 1.65; 2017/2018, 2018/2019, 2020/2021, 2022/2023, 2024/2025: note 1.0; 2023/2024: note 1.5; 2025/2026: note 2.0)
- **Geophysics Research: Overview on Methods and Open Questions** (MSc), 1 lecture (2020/2021, 2024/2025, 2025/2026 WS)  
Content: space weather related topics
- **Special Topics in Paleo- and Geomagnetism** (MSc) ~4 seminars per year (~2 by myself and ~2 by my students/Postdocs or my guests funded from my grants), (2023–2025 SS/WS)  
Content: space weather related topics
- **Lunch Time Seminar at Geophysics** (MSc), ~2 seminars per year (myself, my students, Postdocs, guests funded from my grants), (2023–2025 SS/WS)  
Content: space weather related topics
- **Practical Big Data Science** (MSc), 8 tutorials (2020 SS)  
Content: advising on joint project with Institute for Informatics at the LMU “Modeling of Earth’s radiation environment”
- **Mathematical Geophysics** (MSc), 11 tutorials (2017/2018 WS)  
Content: harmonic oscillator, lagrangian mechanics, discrete oscillating systems, vibrating string, elastic membrane, Fourier transform, convolution product, normal modes of a sphere
- **Geo- and Paleomagnetism** (BSc), 4 tutorials in German (2017 SS)  
Content: Exercises related to electromagnetodynamics (Maxwell equations, induction), calculations of simple magnetic fields and spherical harmonics
- **Modern Paleo- and Geomagnetism** (MSc), 2 lectures + 1 tutorial (2016–2023 SS)  
Content: a brief introduction to the magnetosphere and the ionosphere with a focus on the cause of geomagnetic field disturbances
- **The Earth’s core and Geodynamo** (MSc), 2 lectures + 1 tutorial (2016 SS)  
Content: Application of magnetohydrodynamics to the external geomagnetic field

I mentored 21 Bachelor and Master students, plus 2 PhD students, e.g.,:

*Simon Mischel*, “Soft Proton flux Analysis for the SMILE Mission”, (MSc), August 2025  
*Felix Schweikl*, “Time Series Analysis for Prediction of Geomagnetic Indices”, (MSc), 2025, Vlastislav Cervený Student Prize, Honorary Award  
*Nicolas Doepke*, “Understanding Differences in Earth’s Ionospheric Cold Ion Outflow Originating on either day- or night-side Using Machine Learning”, (BSc), 2024  
*Simon Mischel*, “Evaluation proton intensities for the SMILE mission”, (BSc), 2023  
*Songyan Li*, “Ion Dynamics in the Inner Magnetosphere”, (PhD), 2022  
*Katharina Maetschke*, “Effects of the Magnetospheric Tail Activity on the Earth’s Ionosphere”, (BSc), 2021  
*Anna Sedlmeir*, “Prediction of proton intensities in the Earth’s magnetosheath: machine learning approach”, (BSc), 2021

*Alexandra Hardt*, “Prediction of soft-proton contamination in XMM-Newton by Cluster observations: a machine learning approach”, (BSc), 2021

*Jamie Gorman*, “Energetic particle acceleration events in the Earth’s magnetosphere”, (MSc), 2018

*Nina von Siebert*, “Long-term electron observations in the radiation belts”, (BSc), 2018

At MPS, I was mentoring a PhD thesis:

*Li Kun* “Study on magnetospheric cold ion outflow” (2013)

Currently I mentor 1 Master and 3 PhD students:

*Nicolas Doecke*, “Predictive Analytics of Cold Ion Outflow from the Earth’s Ionosphere”, (MSc), expected in December 2026

*Dmitrii Gurev*, “‘Electron seed population and its impact on ring current, ionosphere and thermosphere dynamics’, (PhD), LMU, expected in November 2028

*Simon Mischel*, “Energy deposition from the magnetotail into the ionosphere and thermosphere”, (PhD), LMU, expected in August 15, 2029

*Parvathy Santhini*, “Understanding the acceleration of ultra-relativistic electrons and its dependence on the plasma density”, (PhD), University of Potsdam, expected in April 2029

## Peer-reviewed publications

Bachelor and Master students are marked with \*, Ph.D students with \*\* and Postdocs with \*\*\*. The publications from Volkswagen project are marked with #. **In total 123 and 25 first author publications.**

### 2026

\*Mischel, S., **E. A. Kronberg**, and C. P. Escoubet, Soft Proton Environment Modeling for SMILE Using XGBoost and Solar Cycle-Informed Synthetic Datasets, *Space Weather*, accepted, 2026

\*Mischel, S., **E. A. Kronberg**, and C. P. Escoubet, Supporting Informed Shutter Operations for SMILE's SXI Using Ensemble Classifiers for Soft Proton High Flux Period Predictions, *Space Weather*, accepted, doi:10.1029/2024SW004832, 2026

Gai, C., A. Vaivads, M. C. Katrougkalou, A. Kullen, T. Karlsson and **E. A. Kronberg**, Cluster Observations of Extreme Energetic Electron Acceleration Event in the Earth's Magnetotail, *J. Geophys. Res.*, Vol. 131, 5, doi:10.1029/2026JA035106, 2026

Khalimonenko, N., L. Kozak, B. Petrenko and **E. A. Kronberg**, Forecasting geomagnetic Kp index using Long Short-Term Memory-Attention model, *J. of Atmospheric and Solar-Terrestrial Physics*, Vol. 284, doi:10.1016/j.jastp.2026.106839, 2026

\*\*\*Smirnov, A., E. N. Asamoah, V. Navas-Portella, **E. A. Kronberg**, H. Lühr, Q. Liu and M. Hernández-Pajares, Global IsUG index maps for tracking ionospheric variability: a case study of the 4-5 November 2023 geomagnetic storm, *J. of Space Weather and Space Climate*, Vol. 16, doi:10.1051/swsc/2026008, 2026

### 2025

\*\*Gurev, D., **E. A. Kronberg**, A. Runov and Y. Shprits, Cross Calibration of Energetic Electron Flux Measurements From the Cluster and THEMIS Missions, *J. Geophys. Res.*, doi:10.1029/2025JA034226, 2025

\*\*\*Smirnov, A., Y. Shprits, H. Lühr, **E. A. Kronberg**, J. Goldstein, Y. Miyoshi, F. Prol, A. Pignalberi, N. Buzulukova, N. Pedatella, B. Haas, D. Wang, Y. Kasahara, F. Tsuchiya, S. Matsuda, A. Shinbori, and A. Matsuoka, Bridging the Gap Between the Earth's Ionosphere and Plasmasphere, *Geophysical Research Letters*, Vol. 52, 23, doi:10.1029/2025GL119267, 2025

Kozak, L. V., B. A. Petrenko, N. O. Khalimonenko, **E. A. Kronberg** and I. Ballai, Influence of Turbulence on Electric-Field Intensity Variations in the Earth's Atmosphere, *Kinematics and Physics of Celestial Bodies*, Vol. 41, doi:10.3103/S0884591325060042, 2025

Li, K., J. Chen, L. Chai, **E. A. Kronberg** and \*Doepke, N., Evolution of the electron-to-ion temperature ratio of cold plasma in the lobes, *Frontiers in Astronomy and Space Sciences*, Vol. 12, doi:10.3389/fspas.2025.1683785, 2025

\*Doepke, N., **E. A. Kronberg**, K. Li, A. Smirnov, R. Ilie and F. Scheipl, Predictive Analytics of Cold Ion Outflow from the Earth's Ionosphere, *Frontiers in Astronomy and Space Sciences*, Vol. 12, doi:10.3389/fspas.2023.1226200, 2025

\*\*\*Smirnov, A., Y. Shprits, H. Lühr, A. Pignalberi, **E. Kronberg**, F. Prol, C. Xiong, Extreme two-phase change of ionospheric electron temperature overshoot during geomagnetic storms, *Scientific Reports*, Vol. 15, 1, doi:10.1038/s41598-025-89602-z, 2025

Liu, C. M., J. B. Cao, Y. Y. Liu, **E. A. Kronberg**, X. N. Xing, B. N. Zhao, P. W. Daly, Autogenous Electron Acceleration by Ion Flow Vortex in Space Plasmas, *Astrophysical Journal*, Vol. 979, 2, doi:10.3847/1538-4357/ada269, 2025

## 2024

\*Mischel, S., **E. A. Kronberg**, and C. P. Escoubet, Evaluating Proton Intensities for the SMILE Mission, *Space Weather*, 22(12), doi:10.1029/2024SW003934, 2024

#Kozak, L., I. Ballai, V. Fedun, **E. A. Kronberg**, A. Blöcker, B. Petrenko, Changes in turbulent processes caused by atmospheric gravity waves from troposphere, *Journal of Atmospheric and Solar-Terrestrial Physics*, Volume 265, id.106364, 10.1016/j.jastp.2024.106364, 2024

\*\*\*Blöcker, A., **E. A. Kronberg**, E. E. Grigorenko, R. W. Ebert and G. Clark, Plasmoids and Magnetic Field Dipolarizations During Juno's First 47 Orbits: Is Ion Acceleration Always Observed in the Dipolarizations?, *J. Geophys. Res.*, doi:10.1029/2024JA032853, 2024

Cao, Xin , et al., Science return of probing magnetospheric systems of ice giants , vol. 11(id. 1203705), doi: 10.3389/fspas.2024.1203705, 2024

Bashir, M. Fraz, **E. A. Kronberg**, and L. J. Chen, L. J., Editorial: Circulation of heavy ions and their role in regulating the near-earth plasma dynamics , 11, doi: 10.3389/fspas.2024.1382511, 2024

Carter, J. A. , et al. (2024), Ground-based and additional science support for SMILE , vol. 8, issue 1, pp. 275-298, doi: 10.26464/epp2023055, 2024

## 2023

\*\*Li, S. Y., **E. A. Kronberg**, C. G. Mouikis, H. Luo, Y. S. Ge, A. M. Du, Prediction of Proton Pressure in the Outer Part of the Inner Magnetosphere Using Machine Learning , Volume 21, Issue 9(article id. e2022SW003387), doi: 10.1029/2022SW003387, 2023

#Maetschke, K. N., **E. A. Kronberg**, N. Partamies and E. E. Grigorenko, A possible mechanism for the formation of an eastward moving auroral spiral , vol. 10(id. 1240081), doi: 10.3389/fspas.2023.1240081, 2023

Stolle, C., J. Baerenzung, **E. A. Kronberg**, J. Kusche, H. Liu and H. Shimizu, Special issue "DynamicEarth: Earth's interior, surface, ocean, atmosphere, and near space interactions" , Volume 75, Issue 1(article id.137), doi: 10.1186/s40623-023-01893-6, 2023

\*\*\*Blöcker, A, **E. A. Kronberg**, E. E. Grigorenko, E. Roussos and G. Clark, Dipolarization Fronts in the Jovian Magnetotail: Statistical Survey of Ion Intensity Variations Using Juno Observations, *J. Geophys. Res.*, doi:10.1029/2023JA031312, 2023

Borovsky, J. G. L. Delzanno, **E. A. Kronberg** and C. Norgren, Editorial: Cold-ion populations and cold-electron populations in the Earth's magnetosphere and their impact on the system, *Frontiers in Astronomy and Space Sciences*, doi:10.3389/fspas.2023.1180235, 2023

Ren, J., Q. Zong, S. Fu, H. Yang, Z. Hu, X. Zhang, X. Zhou, C. Yue, L. Kistler, P. Daly, **E. A. Kronberg** R and Rankin, The Dynamics of Earth's Cusp in Response to the Interplanetary Shock, *Universe*, Vol. 9, issue 3, doi: 10.3390/universe9030143, 2023

Grigorenko, E. E., Malykhin A. Y., **E. A. Kronberg** and E. V. Panov, Quasi-parallel Whistler Waves and Their Interaction with Resonant Electrons during High-velocity Bulk Flows in the Earth's Magnetotail, *Astrophysical Journal*, Vol. 943, 2, doi:10.3847/1538-4357/acaf52, 2023

#Kozak, L., **E. A. Kronberg**, B. Petrenko, A. Blöcker, R. Akhmetshyn, I. Ballai and V. Fedun, Turbulent dipolarization regions in the Earth's magnetotail: ion fluxes and magnetic field changes , vol. 10(id. 1226200), doi: 10.3389/fspas.2023.1226200, 2023

#Cheremnykh, O. K., A. K. Fedorenko, O.S. Cheremnykh and **Kronberg, E. A.**, (2023), Acoustic-gravity waves with height-independent amplitude in the isothermal atmosphere , vol. 39, issue 5(pp. 280-286), doi: 10.3103/S0884591323050021, 2023

#Cheremnykh, O. K., A. K. Fedorenko, O.S. Cheremnykh and **Kronberg, E. A.**, Splitting of the wave disturbance spectrum in the isothermal atmosphere due to its rotation , vol. 39, issue 6, pp. 3-23, doi: 10.15407/kfnt2023.06.003, 2023

#Petrenko, B., L. Kozak, **E. A. Kronberg**. and Akhmetshyn, R., Multispacecraft wave analysis of current sheet flapping motions in the Earth's magnetotail, *Frontiers in Astronomy and Space Sciences*, doi:10.3389/fspas.2022.1071824, 2023

## 2022

Roussos, E. et al., The in-situ exploration of Jupiter's radiation belts, *Experimental Astronomy*, doi:10.1007/s10686-021-09801-0, 2022

Branduardi-Raymont, G. et al., Exploring solar-terrestrial interactions via multiple imaging observers, *Experimental Astronomy*, doi:10.1007/s10686-021-09784-y, 2022

**Kronberg, E. A.**, Data analysis in space physics: My experience and lessons learned, *Frontiers in Astronomy and Space Sciences*, doi:10.3389/fspas.2022.1008888, 2022

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