

Curriculum Vitae **Dr. Berndt Klecker**

Personal Data: Date of birth: November 12, 1944
Nationality: German

Current Position: Retired Member of the Max-Planck-Institut für extraterrestrische Physik, Postfach 1312,
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Education: Diploma (Physics) Technical University, Munich 1973
Dr. rer. nat. (Physics) Technical University, Munich 1978

Academic Positions:

1976 - 1986 Research Scientist, Max-Planck-Institut für extraterrestrische Physik, Garching
1986 - Nov 2009 Senior Research Scientist, Max-Planck-Institut für extraterrestrische Physik
Dec 2009 - present Retired member of Max-Planck-Institut für extraterrestrische Physik

Research Experience:

Analysis and interpretation of spacecraft data obtained in the magnetosphere of the Earth and in interplanetary space. Development of sensors for the determination of mass, charge, energy and flux of plasma and energetic particles in the near-Earth environment and in interplanetary space.

Projects:

Principal Investigator: SOHO-CELIAS Investigation (2007 - 2011);
Lead Co-Investigator at MPE: HIENLO-GAS investigation on STS, 1986-1988; SMEX/SAMPEX HILT investigation, 1988-present; Cluster-CIS Experiment, 1990-present; ACE-SEPICA investigation, 1991-present; Equator-S-ICI investigation, 1993-1997, SOHO-CELIAS Investigation, 1997-2006 (Deputy-PI); STEREO-PLASTIC Investigation, 1999-present;
Co-Investigator: ISEE-1/3-HOM/HOH experiments, 1977-1993; AMPTE/IRM - SULEICA Spectrometer 1980-88; PHOBOS-Alpha-X experiment, 1984-1987; SOHO-CELIAS Investigation, 1988-1996; Associated Scientist: IMP-7/8, 1976-1980; FAST/TEAMS Experiment, 1991-present.

Professional Memberships:

Deutsche Physikalische Gesellschaft, European Geophysical Union, American Geophysical Union.

Bibliometric Information: (Web of Science, Status December 2011): Nr. Papers: 317, H-Index: 44

Selected Publications (from more than 300 in refereed journals and proceedings):

- Klecker, B. et al., Composition and energy spectra of cosmic rays between 0.6 and 24 MeV/nucleon during quiet times: transition from a solar to the anomalous component, *Ap. J.*, **212**, 290, 1977.
- Klecker, B., The anomalous component of low-energy cosmic rays: a comparison of observed spectra with model calculations, *J. Geophys. Res.*, **82**, 5287, 1977.
- Klecker, B., M. Scholer, D. Hovestadt, et al: Spectral and compositional variations of low-energy ions during an energetic storm particle event, *Astrophys. J.* **251** (1), 393-401, 1981.
- Klecker, B., D. Hovestadt, M. Scholer, et al: Energy and charge-distribution of energetic helium-ions in the outer radiation belt of the Earth, *J. Geophys. - Zeitschrift für Geophysik*, **52** (3), 239-246, 1983.
- Klecker, B., et al., Direct determination of the ionic charge distribution of helium and iron in Fe-rich solar energetic particle events, *Astrophys. J.*, **281**, 458, 1984.
- Klecker, B., M. Scholer, D. Hovestadt, et al: Correlation between proton anisotropy and magnetic field direction in the distant geotail, *Geophys. Res. Lett.* **11** (10), 1038-1041, 1984.
- Klecker, B., D. Hovestadt, M. Scholer, et al: HILT-a heavy-ion large area proportional counter telescope for solar and anomalous cosmic rays, *IEEE Trans Geosc. Remote Sensing* **31** (3), 542-548, 1993.
- Klecker, B., The anomalous component of cosmic rays - Review and new results from SAMPEX, *Nucl. Phys. B Suppl.* **39**, 94-102, 1995.

- Klecker, B., et al., Charge state of anomalous cosmic-ray nitrogen, oxygen, and neon: SAMPEX observations, *Astrophys. J.* **442**, L69-L72, 1995.
- Klecker, B.: Energetic particle environment in near-Earth orbit, *Adv. Space Res.* **17** (2), 37-45, 1995.
- Klecker, B., et al.: The ionic charge composition of anomalous cosmic rays. *Space Sci. Rev.* **83**, 294-299, 1998.
- Klecker, B. & R.A. Mewaldt, et al., Anomalous Cosmic Rays, *Space Sci. Rev.* **83**, 259-308 (1998).
- Klecker, B., R.A. Mewaldt, M. Oetliker and R.A. Leske: A search for minor ions in anomalous cosmic rays. *Space Sci. Rev.* **83**, 299-303, 1998.
- Klecker, B.: Anomalous Cosmic Rays: Our present understanding and open questions. *Adv. Space Res.* **23** (3), 521-530, 1999.
- Klecker, B.: Anomalous Cosmic Rays and Solar Energetic Particle Composition. In: Proc. of the 26th Intern. Cosmic Ray Conference. Invited, Rapporteur, and Highlight Papers. *AIP* **516**, 140-152, 2000.
- Klecker, B., et al.: Comparison of ionic charge states of energetic particles with solar wind charge states in CME related events. In: Proc. Acceleration and Transport of Energetic Particles in the Heliosphere, ACE 2000 Symposium. (Eds.) R. A. Mewaldt, J.J. R. Jokipii, M. A. Lee, E. Möbius and T. H. Zurbuchen. *AIP* **528**, 135-138, 2000.
- Klecker, B., V. Bothmer, A. C. Cummings, et al., Galactic Abundances: Report of working group 3, In: Solar and Galactic Composition, *AIP Conf. Proc.* **598**, 207-220, 2001.
- McDonald, F.B., B. Klecker, R.E. McGuire and D.V. Reames: Relative recovery of galactic and anomalous cosmic rays at 1 AU: Further evidence for modulation in the heliosheath. *J. Geophys. Res.* **107** (A8), SSH 2-1-SSH 2-9, 2002.
- Bouhram M, B. Klecker B, G. Paschmann, et al.: Multipoint analysis of the spatio-temporal coherence of dayside O⁺ outflows with Cluster, *Annal. Geophys.* **22** (7), 2507-2514, 2004.
- Marghitu, O., B. Klecker, G. Haerendel, et al.: ALADYN: A method to investigate auroral arc electrodynamics from satellite data, *J. Geophys. Res.* **109**, A11208, 2004.
- Heber, B. and B. Klecker: Remote sensing of solar activity by energetic charged and neutral particles with Solar Orbiter. *Adv. Space Res.*, **36**, 1387-1398, 2005.
- Klecker, B., Solar energetic particle composition. In 'Solar Eruptions and Energetic Particles'; Eds: N. Gopalswamy, J. Torsti, *Geophysical Monograph*, Vol **165**, 147-156, 2006.
- Klecker, B., E. et al., Observation of energy-dependent ionic charge states in impulsive solar energetic particle events, *Adv. Space Res.*, **38**, 493 - 497, 2006.
- Klecker, B., H. Kunow, et al., Energetic Particle Observation, *Space Science Rev.*, **123**, 217 – 250, 2006.
- Klecker, B., et al., Solar energetic particle charge states: an overview, *Space Science Rev.*, **124**, 289 – 301, 2006.
- Klecker, B., et al., Ionic charge states of solar energetic particles: a clue to the source, *Space Science Rev.*, **130**, 273-282, 2007.
- Klecker, B.: Interplanetary particles and magnetic fields. In: Landolt-Börnstein, Numerical Data and Functional Relationships in Science and Technology, New Series, Group VI, Volume 4B, Astronomy, Astrophysics, and Cosmology (Edt.: J. Trümper), Chapter 4.3.6, p 537-559, 2009.
- Klecker, B.: Energetic particles in the heliosphere. In: Proc. 21st European Cosmic Ray Symposium, Invited papers, Kosice, Slovakia, 9 - 12 September 2008, p 27-38, 2009.
- Klecker, B.: Sun, Corona, and Transient Phenomena in the Heliosphere. In: Proc. 30th Intern. Cosmic Ray Conf, Invited and Rapporteur Papers, Vol 6, p 225 - 237, 2009.
- Heber, B., and B. Klecker: Sun, Corona, and Transient Phenomena in the Heliosphere. In: Proc. 31st Intern. Cosmic Ray Conf., Lodz, Poland; Invited, Rapporteur and Highlight Papers, 23-37 (2010).
- Klecker, B., M. A. Popecki, E. Möbius: Iron charge distributions during the onset phase of large SEP events. In: Proc. 32nd Intern. Cosmic Ray Conf., Beijing, China, Paper ID 0882 (2011).