

Publications of Hannu Koskinen

Updated, December 22, 2015

Text-books

- Koskinen, H., Johdatus plasmafysiikkaan ja sen avaruussovellutuksiin, 256 s., Limes ry, Helsinki, 2001. (Introduction to plasma physics and its space applications, in Finnish).
- Koskinen, H., and Vainio, R., Klassinen mekaniikka, 196 s., Limes ry, Helsinki, 2010. (Classical mechanics, in Finnish).
- Koskinen, H. E. J., Physics of Space Storms – From the Solar Surface to the Earth, 437 pages, Springer/PRAXIS, 2011, ISBN 978-3-642-00310-3
- Koskinen, H., Johdatus plasmafysiikkaan ja sen avaruussovellutuksiin, toinen uudistettu laitos, 267 s., Limes ry, Helsinki, 2011. (Introduction to plasma physics and its space applications, second revised edition, in Finnish).

Peer-reviewed scientific articles

1. Koskinen, H. E. J., G. Holmgren, and P. M. Kintner, Observations of LHR noise with banded structure by the sounding rocket S29 Barium-GEOS, *J. Geophys. Res.*, **88**, 4131–4136, 1983.
2. Koskinen, H. E. J., Lower hybrid parametric processes on auroral field lines in the topside ionosphere, *J. Geophys. Res.*, **90**, 8361–8369, 1985.
3. Koskinen, H. E. J., Parametric processes of lower hybrid waves in multicomponent auroral plasmas, in *Ion Acceleration in the Magnetosphere and Ionosphere* (Geophysical Monograph 38), edited by T. Chang, pp. 291–296, American Geophysical Union, Washington, D.C., 1986.
4. Koskinen, H. E. J., et al., Observations of ion cyclotron harmonic waves by the Viking satellite, *Geophys. Res. Lett.*, **14**, 459–462, 1987.
5. André, M., H. Koskinen, G. Gustafsson, and R. Lundin, Ion waves and upgoing ion beams observed by the Viking satellite, *Geophys. Res. Lett.*, **14**, 463–466, 1987.
6. Kintner, P. M., et al. (with H. Koskinen) Detection of spatial density turbulence by the Viking plasma wave interferometer, *Geophys. Res. Lett.*, **14**, 467–470, 1987.
7. Koskinen, H. E. J., et al., A review of initial low frequency wave measurements by the Viking satellite, *Ann. Geophysicae*, **5**, 177–180, 1987.
8. André, M., H. Koskinen, L. Matson, and R. Erlandson, Local transverse ion energization in and near the polar cusp, *Geophys. Res. Lett.*, **15**, 107–110, 1988.
9. Gustafsson, G., R. Boström, B. Holback, G. Holmgren, and H. E. J. Koskinen, First Viking results: Low frequency wave measurements, *Physica Scripta*, **37**, 475–478, 1988.
10. Koskinen, H. E. J., et al., Viking observations of wave-particle interactions and ion wave instabilities in the high-latitude magnetosphere, *Computer Phys. Comm.*, **49**, 75–83, 1988.
11. Boström, R., et al. (with H. Koskinen), Characteristics of solitary waves and weak double layers in the magnetospheric plasma, *Phys. Rev. Lett.*, **61**, 82–85, 1988.
12. Hultqvist, B., et al. (with H. Koskinen), Simultaneous observation of upward moving field aligned energetic electrons and ions on auroral zone field lines, *J. Geophys. Res.*, **93**, 9765–9776, 1988.
13. Koskinen, H., R. Boström, and B. Holback, Viking observations of solitary waves and weak double layers on auroral field lines, in *Physics of Space Plasmas (1987)* SPI Conference Proceedings and Reprint Series, Number 7, edited by T. Chang, G.B. Crew, and J.R. Jasperse, pp. 147–156. Scientific Publishers, Inc., Cambridge, MA, 1989.
14. André, M., H. Koskinen, and L. Matson, Transverse ion heating in the polar cusp region, in *Physics of Space Plasmas (1987)* SPI Conference Proceedings and Reprint Series, Number 7, edited by T. Chang, G.B. Crew, and J.R. Jasperse, pp. 261–266. Scientific Publishers, Inc., Cambridge, MA, 1989.
15. Boström, R., B. Holback, G. Holmgren, and H. Koskinen, Solitary structures in the magnetospheric plasma, *Physica Scripta*, **39**, 782–786, 1989.
16. Mälkki, A., H. Koskinen, R. Boström, and B. Holback, On theories attempting to explain observations of solitary waves and weak double layers in the auroral magnetosphere, *Physica Scripta*, **39**, 787–793, 1989.

17. Lundin, R., et al. (with H. Koskinen), First measurements of the ionospheric plasma escape from Mars, *Nature*, 341, 609–612, 1989.
18. Pellinen, R. J., H. E. J. Koskinen, et al., Satellite and ground-based observations of a fading transpolar arc, *J. Geophys. Res.*, 95, 5817–5824, 1990.
19. Gustafsson, G., M. André, L. Matson, and H. Koskinen, On waves below the local proton gyro frequency in auroral acceleration regions, *J. Geophys. Res.*, 95, 5889–5904, 1990.
20. Koskinen, H. E. J., R. Lundin, and B. Holback, On the plasma environment of solitary waves and weak double layers, *J. Geophys. Res.*, 95, 5921–5929, 1990.
21. Dubinin, E. M., et al. (with H. Koskinen), Indirect evidences for a gas/dust torus along the Phobos orbit, *Geophys. Res. Lett.*, 17, 861–864, 1990.
22. Lundin, R., et al. (with H. Koskinen), ASPERA/PHOBOS measurements of the ion outflow from the Martian ionosphere, *Geophys. Res. Lett.*, 17, 873–876, 1990.
23. Lundin, R., et al. (with H. Koskinen), Plasma composition measurements of the Martian magnetosphere morphology, *Geophys. Res. Lett.*, 17, 877–880, 1990.
24. Koskinen, H. E. J., T. I. Pulkkinen, and R. J. Pellinen, Mapping of the auroral horn into the magnetotail, *Planet. Space Sci.*, 38, 1179–1186, 1990.
25. Dubinin, E. M., et al., (with H. Koskinen), Tails of Phobos and Deimos in the solar wind and in the Martian magnetosphere, *Planet. Space Sci.*, 39, 123–130, 1991.
26. Lundin, R., et al. (with H. Koskinen), On the momentum transfer of the solar wind to the Martian topside ionosphere, *Geophys. Res. Lett.*, 18, 1059–1062, 1991.
27. Pulkkinen, T. I., H. E. J. Koskinen, R. J. Pellinen, Mapping of auroral arcs during substorm growth phase, *J. Geophys. Res.*, 96, 21087–21097, 1991.
28. Pulkkinen, T. I., (with H. E. J. Koskinen), Auroral signatures of substorm recovery phase: A case study, in *Magnetospheric Substorms*, ed. by J. R. Kan, T. A. Potemra, S. Kokubun, T. Iijima, pp. 333–341, American Geophysical Union Monograph No 64, AGU, Washington, D.C., 1991.
29. Pulkkinen, T. I., et al. (with H. E. J. Koskinen), Particle scattering and current sheet stability in the geomagnetic tail during the substorm growth phase, *J. Geophys. Res.*, 97, 19283–19297, 1992.
30. Koskinen, H. E. J., Theoretical aspects of weak double layers and their relation to the electrodynamic coupling between the magnetosphere and ionosphere, *IEEE Trans. Plasma Sci.*, 20, 797–802, 1992.
31. Dubinin, E., R. Lundin, H. Koskinen, and O. Norberg, Cold ions at the Martian bow shock: Phobos observations, *J. Geophys. Res.*, 98, 5617–5623, 1993.
32. Koskinen, H. E. J., et al., Pseudobreakup and substorm growth phase in the ionosphere and magnetosphere, *J. Geophys. Res.*, 98, 5801–5813, 1993.
33. Lopez, R. E., H. E. J. Koskinen, et al., Simultaneous observation of the poleward expansion of substorm electrojet activity and the tailward expansion of current sheet disruption in the near-earth magnetotail, *J. Geophys. Res.*, 98, 9285–9295, 1993.
34. Takalo, J., J. Timonen, and H. Koskinen, Correlation dimension and affinity of AE data and bicolored noise, *Geophys. Res. Lett.* 20, 1527–1530, 1993.
35. Mälkki, A., et al. (with H. E. J. Koskinen), A statistical survey of auroral solitary waves and weak double layers: 1. Occurrence and net voltage, *J. Geophys. Res.*, 98, 15521–15530, 1993.
36. Kallio, H. Koskinen, E., S. Barabash, R. Lundin, O. Norberg, and J. G. Luhmann, 3D plasma observations near Mars, *Geophys. Res. Lett.*, 20, 2339–2342, 1993.
37. Koskinen, H. E. J., and A. M. Mälkki, Auroral weak double layers: A critical assessment, in *Auroral Plasma Dynamics*, ed. by R. L. Lysak, pp. 97–104, American Geophysical Union Monograph No 80, AGU, Washington, D.C., 1993.
38. Takalo, J., J. Timonen, and H. Koskinen, Properties of AE data and bicolored noise, *J. Geophys. Res.*, 99, 13239–1349, 1994.
39. Eliasson, L., et al. (with H. Koskinen), Freja observations of heating and precipitation of positive ions, *Geophys. Res. Lett.*, 21, 1911–1914, 1994.
40. Kallio, E., H. Koskinen, et al., Proton flow in the Martian magnetosheath, *J. Geophys. Res.*, 99, 23547–23559, 1994.
41. Eliasson, L. et al. (with H. Koskinen), The Freja hot plasma experiment – Instrument and first results, *Rev. Space. Sci.*, 70, 563–576, 1994.
42. Kallio, E., H. Koskinen, et al., Nightside magnetosheath of Mars: ASPERA observations, *Adv. Space. Res.* 16, vol 4, 119–122, 1995.
43. Koskinen, H. E. J., and T. I. Pulkkinen, Midnight velocity shear zone and the concept of Harang discontinuity, *J. Geophys. Res.*, 100, 9539–9547, 1995.

44. Kallio, E., H. Koskinen, et al., Oxygen outflow in the Martian magnetotail, *Geophys. Res. Lett.*, **22**, 2449–2452, 1995.
45. Barabash, S., E. Kallio, R. Lundin, and H. Koskinen, Measurements of the non thermal helium escape from Mars, *J. Geophys. Res.*, **100**, 21307–21310, 1995.
46. Takalo, J., J. Timonen, and H. Koskinen, Dynamics of the magnetosphere from AE and AL data, in *Physics of Space Plasmas (1993)*, Proceedings of the 1993 Cambridge Workshop in Geoplasma Physics and 1993 MIT Symposium on the Physics of Space Plasmas, Number 13, edited by T. Chang and J.R. Jasperse, p. 503–508. MIT Center for Theoretical Geo/Cosmo Plasma Physics, Cambridge, MA, 1995.
47. Sandahl, I., S., et al. (with H. Koskinen), First results from the plasma composition spectrometer PROMICS-3 in the Interball project, *Ann. Geophysicae*, **15**, 542–552, 1997.
48. Janhunen, P., and H. E. J. Koskinen, The closure of Region-1 field-aligned current in MHD simulation, *Geophys. Res. Lett.*, **24**, 1419–1422, 1997.
49. Koskinen, H. E. J., Observations of magnetospheric waves and their relation to precipitation, *Space Sci. Rev.*, **80**, 133–152, 1997. (Reprinted in *Transport across the Boundaries of the Magnetosphere*, Space Science Series of ISSI, Vol 2, edited by B. Hultqvist and M. Øieroset, Kluwer Academic Publishers, Dordrecht, 1997.)
50. Pulkkinen, T. I., H. E. J. Koskinen, et al., Data-based magnetic field models: Present status and future prospects, In *Satellite-Ground Based Coordination Sourcebook*, ESA SP-1198, pp. 293–317, 1997.
51. Savin, S. P., et al. (with H. Koskinen), Interball magnetotail boundary case studies, *Adv. Space Res.*, **20**, 999–1015, 1997.
52. Barabash, S., et al. (with H. Koskinen), Energetic neutral atom imaging by the Astrid microsatellite, *Adv. Space Res.*, **20**, no.4/5, 1055–1060, 1997.
53. Koskinen, H., On assumptions in low-altitude investigation of dayside magnetospheric phenomena, *Physics and Chemistry of the Earth*, Vol 22, 701–707, 1997.
54. Barabash, S., et al. (with H. Koskinen), Energetic neutral atom imager on the Swedish microsatellite Astrid, in *Measurement Techniques in Space Plasmas: Fields*, ed. by R. F. Pfaff, J. E. Borovsky, and D. T. Young, pp. 257–262, American Geophysical Union Monograph No 103, AGU, Washington, D.C., 1998.
55. Kallio, E., and H. Koskinen, Ion acceleration in the Martian plasma environment, *Adv. Space Res.*, Vol 21, 4, 573–582, 1998.
56. Toivanen, P. K., H. E. J. Koskinen, and T. I. Pulkkinen, Mapping between the ionospheric and the tail electric fields in a time-dependent Earth's magnetosphere, *J. Geophys. Res.*, **103**, 9153–9164, 1998.
57. Mäkelä, J., et al. (with H. Koskinen), Observations of mesoscale auroral plasma cavity crossings with the Freja satellite, *J. Geophys. Res.*, **103**, 9391–9404, 1998.
58. Sandahl, I., H. E. J. Koskinen, et al., Dispersive magnetoheath-like ion injections in the evening sector on January 11, 1997, *Geophys. Res. Lett.*, **25**, 2569–2572, 1998.
59. Pissarenko, N. F., et al. (with H. Koskinen), Structure of the Earth's Ring Current during a Solar Minimum, *Cosmic Research*, **36**, 549–558, 1998.
60. Kallio, E., and H. Koskinen, A test particle simulation of the motion of oxygen ions and solar wind protons near Mars, *J. Geophys. Res.*, **104**, 557–579, 1999.
61. Toivanen, P. K., et al. (with H. E. J. Koskinen), Time-dependent modeling of particles and electromagnetic fields during the substorm growth phase: Anisotropy of energetic electrons, *J. Geophys. Res.*, **104**, 10205–10220, 1999.
62. Sandahl, I., et al. (with H. Koskinen), First results from the hot plasma instrument PROMICS-3 on Interball-2, *Ann. Geophysicae*, **17**, 659–673, 1999.
63. Mäkelä, J. S., et al. (with H. E. J. Koskinen), Evolution of mesoscale auroral cavities before substorm onset, *J. Geophys. Res.*, **104**, 17201–17215, 1999.
64. Lyons, L. R., H. E. J. Koskinen, et al.: Processes leading to plasma losses into high-latitude atmosphere, Chapter 3 (pp. 84–135) in *Magnetospheric Plasma Sources and Losses*, Space Sciences Series of ISSI, Vol. 6, Edited by B. Hultqvist, M. Øieroset, G. Paschmann, and R. Treumann (in total 480 p., some 50 authors), Kluwer Academic Publishers, Dordrecht, 1999. (Reprinted from *Space Science Reviews*, Vol. 88, Nos. 1–2, 1999.)
65. Koskinen, H. E. J., et al., Observations of plasma entry into the magnetosphere at late magnetic local times, *Adv. Space Res.*, **27/7–8**, 1617–1622, 2000.

66. Kallio, E. I., et al. (with H. E. J. Koskinen), Loading-unloading processes in the nightside ionosphere, *Geophys. Res. Lett.*, 27, 1627–1630, 2000.
67. Kallio, E. J., and H. E. J. Koskinen, A semi-empirical magnetosheath model to analyze the solar wind-magnetosphere interaction, *J. Geophys. Res.*, 105, 27469–27480, 2000.
68. Sucksdorff, C., et al. (including H. Koskinen), Space physics, in Special Issue: Geophysics in Finland During the 1900's, *Geophysica*, 37 (1-2), 309-355, 2001.
69. Tanskanen, E., et al. (with H. E. J. Koskinen), Substorm energy budget during low and high solar activity: 1997 and 1999 compared. *J. Geophys. Res.*, 107, A6, 10.1029/2001JA900153, 2002.
70. Huttunen, K. E. J., H. E. J. Koskinen, and R. Schwenn, Variability of magnetospheric storms driven by different solar wind perturbations, *J. Geophys. Res.*, 107, A7, 10.1029/2001JA900171, 2002.
71. Koskinen, H. E. J., and E. I. Tanskanen, Magnetospheric energy budget and the epsilon parameter, *J. Geophys. Res.*, 107, (A11), 1415, doi:10.1029/2002JA009283, 2002.
72. Huttunen, K. E. J., H. E. J. Koskinen, et al., April 2000 magnetic storm: Solar wind driver and magnetospheric response, *J. Geophys. Res.*, 107, (A12), 1440, doi:10.1029/2002JA0099154, 2002.
73. Tanskanen, E., H. E. J. Koskinen, T. I. Pulkkinen, J. A. Slavin, and K. Ogilvie, Dissipation to the Joule Heating: Isolated and storm-time substorms, *Adv. Space Res.*, 30, 2305-2311, 2002.
74. Amm, O., et al. (with Koskinen), H., Paschmann, G. (ed.), and Treumann, R.A. (ed.), Auroral Plasma Physics. Space Science Series of ISSI - 15, Kluwer Academic Publishers, Dordrecht, Holland. ISBN: 1-4020-0963-1. 2003. (Reprinted from *Space Science Reviews*, Vol. 103, Nos. 1–2, 2002.)
75. Grande, M., et al. (with H. Koskinen), The D-CIXS X-ray mapping spectrometer on SMART-1, *Planet. Space Sci.* 51, 427-433, 2003.
76. Dunkin, S. K., et al. (with H. Koskinen), Scientific rationale for the D-CIXS X-ray spectrometer on board ESA's SMART-1 mission to the Moon, *Planet. Space Sci.* 51, 435-442, 2003.
77. Palmroth, M., et al. (with H. E. J. Koskinen), Ionospheric energy input as a function of solar wind parameters: global MHD simulation results, *Annales Geophysicae*, 22, 549, 2004.
78. Huttunen, K. E. J. and H. E. J. Koskinen, Importance of post-shock streams and sheath regions as drivers of intense magnetospheric storms and high-latitude activity, *Annales Geophysicae*, 22, 1729-1738, 2004.
79. Lundin, R., et al. (with H. Koskinen), Solar wind-induced atmospheric erosion at Mars: First results from Aspera-3 on Mars Express, *Science*, 305, 1933-1936, 2004.
80. Palmroth, M., H. E. J. Koskinen, et al., Ionospheric power consumption in global MHD simulation predicted from solar wind measurements, *IEEE Transactions on Plasma Science*, 32, 1511-1518, 2004.
81. Palmroth, M., et al. (with H. E. J. Koskinen), Role of solar wind dynamic pressure in driving ionospheric Joule heating, *J. Geophys. Res.*, 109, A11302, doi:10.1029/2004JA010529, 2004.
82. Huttunen, K. E. J., et al. (with H.E.J. Koskinen), Cluster observations of the rapid magnetic field increases in the magnetotail caused by interplanetary shocks and pressure increases, *Annales Geophysicae*, 23, 609-624, 2005.
83. Huttunen, K. E. J., et al. (with H. E. J. Koskinen), Properties and geoeffectiveness of magnetic clouds in the rising, maximum and early declining phases of solar cycle, *Annales Geophysicae*, 23, 625-641, 2005.
84. Tanskanen, E. I., et al. (with H. E. J. Koskinen), Magnetospheric substorms are strongly modulated by interplanetary high-speed streams, *Geophys. Res. Lett.*, 32, L16104, doi:10.1029/2005GL023318.84, 2005.
85. Koskinen, H. E. J., Energetic particle losses from the inner magnetosphere, in *The Inner Magnetosphere, Physics and Modeling*, ed. by T. I. Pulkkinen, N. A. Tsyganenko, and R. H. W. Friedel, pp. 25-31, Geophys. Mon. Ser., 155, AGU, Washington, D.C., 2005.
86. Tanskanen, E., et al. (with H. E. J. Koskinen), Energetics of a substorm on 15 August, 2001: Comparing empirical methods and a global MHD simulation, *Adv. Space Res.*, 36, 10, 1825, 2005.
87. Laitinen, T. V., T. I. Pulkkinen, M. Palmroth, P. Janhunen, and H. E. J. Koskinen, The magnetotail reconnection region in a global MHD simulation, *Annales Geophysicae*, 23, 3753-3764, 2005.
88. Lundin, R., et al. with H. Koskinen), Plasma Acceleration above Martian Magnetic Anomalies, *Science*, 311, 980-983, 2006.
89. Huttunen, K. E. J., H. E. J. Koskinen, et al., Asymmetric development of magnetospheric storms during magnetic clouds and sheath regions, *Geophys. Res. Lett.*, 33, No. 6, L06107, 10.1029/2005GL024894, 2006

90. Pulkkinen, T.I., et al. (with H. E. J. Koskinen), New interpretation of magnetospheric energy circulation. *Geophys. Res. Lett.*, 33, L07101, doi:10.1029/2005GL025457, 2006.
91. Lundin, R., et al. (with H. Koskinen), Ionospheric plasma acceleration at Mars: ASPERA-3 results, *Icarus*, 182(2), 308-319, 2006.
92. Carlsson, E., et al. (with H. Koskinen), Mass composition of the escaping plasma at Mars, *Icarus*, 182(2), 320-328, 2006.
93. Fedorov, A., et al. (with H. Koskinen), Structure of the Martian wake, *Icarus*, 182(2), 329-336, 2006.
94. Dubinin, E., et al. (with H. Koskinen), Electric fields within the martian magnetosphere and ion extraction: ASPERA-3 observations, *Icarus*, 182(2), 337-342, 2006.
95. Dubinin, E., et al. (with H. Koskinen), Solar wind plasma protrusion into martian magnetosphere: ASPERA-3 observations, *Icarus*, 182(2), 343-349, 2006.
96. Kallio, E., et al. (with H. Koskinen), Ion escape at Mars: Comparison of a 3D hybrid simulation with Mars Express IMA/ASPERA3 measurements, *Icarus*, 182(2), 350-359, 2006.
97. Winningham, J.D., et al. (with H. Koskinen), Electron oscillations in the induced martian magnetosphere, *Icarus*, 182(2), 360-370, 2006.
98. Frahm, R.A., et al. (with H. Koskinen), Carbon dioxide photoelectron energy peaks at Mars, *Icarus*, 182(2), 371-382, 2006.
99. Liemohn M.W., (with H. Koskinen), Numerical interpretation of high-altitude photoelectron observations, *Icarus*, 182(2), 383-395, 2006.
100. Soobiah, Y., et al. (with H. Koskinen), Observations of magnetic anomaly signatures in Mars Express ASPERA-3 ELS data, *Icarus*, 182(2), 396-405, 2006.
101. Fränz, M., et al., (with H.E.J. Koskinen), Plasma intrusion above Mars crustal fields - Mars Express ASPERA-3 observations, *Icarus*, 182(2), 406-412, 2006.
102. Futaana, Y., et al. (with H. Koskinen), First ENA observations at Mars: Subsolar ENA jet, *Icarus*, 182(2), 413-423.
103. Futaana, Y., et al. (with H. Koskinen), First ENA observations at Mars: ENA emissions form the martian upper atmosphere, *Icarus*, 182(2), 424-430, 2006.
104. Gunell, H., et al. (with H. Koskinen), First ENA observations at Mars: Charge exchange ENAs produced in the magnetosheath, *Icarus*, 182(2), 431-438, 2006.
105. Brinkfeld, K., et al. (with H. Koskinen), First ENA observations at Mars: Solar-wind ENAs on the nightside, *Icarus*, 182(2), 439-447, 2006.
106. Kallio, E., et al. (with H. Koskinen), Energetic neutral atoms (ENA) at Mars: Properties of the hydrogen atoms produced upstream of the martian bow shock and implications for ENA sounding technique around non-magnetized planets, *Icarus*, 182(2), 448-463, 2006.
107. Koskinen, H. E. J., and K. E. J. Huttunen, Space weather: From solar eruptions to magnetospheric storms, in *Solar Eruptions and Solar Energetic Particles*, ed. N. Gopalswamy, R. Mewaldt, and J. Torsti, AGU Geophysical Monograph, vol 165., 375-385, 2006.
108. Laitinen, T. V., et al. (with H. E. J. Koskinen), On the characterization of magnetic reconnection in global MHD simulations, *Annales Geophysicae*, 24, 3059-3069, 2006.
109. Koskinen, H.E.J, and K.E.J Huttunen, Geoeffectivity of coronal mass ejections, *Space Sci Rev* 124,169-181, 2006.
110. Pulkkinen, T. I., et al. (with H. E. J. Koskinen), Differences in geomagnetic storms driven by magnetic clouds and ICME sheath regions, *Geophys Res Lett* 34 (2007) L02105
111. Yamauchi, M., et al. (with H. Koskinen), IMF Direction Derived from Cycloid-Like Ion Distributions Observed by Mars Express, *Space Sci Rev* 126, 239-266, 2006.
112. Lundin, R., et al. (with H. Koskinen), Auroral Plasma Acceleration Above Martian Magnetic Anomalies, *Space Sci Rev*, 126 (1-4): 333-354, 2006
113. Barabash, S., et a. (with H. Koskinen), The Analyzer of Space Plasmas and Energetic Atoms (ASPERA-3) for the Mars Express Mission, *Space Sci Rev*, 126, 113-164, 2006.
114. Kallio, E., et al. (with H. Koskinen), Energisation of O⁺ and O₂⁺ Ions at Mars: An Analysis of a 3-D Quasi-Neutral Hybrid Model Simulation, *Space Sci Rev*, 126, 39-62, 2006.
115. Nilsson, H., et al. (with H. Koskinen), RPC-ICA: The Ion Composition Analyzer of the Rosetta Plasma Consortium, *Space Sci Rev*, 128 (1-4): 671-695, 2007
116. Laitinen, T. V., et al. (with H. E. J. Koskinen), Continuous reconnection line and pressure-dependent energy conversion on the magnetopause in a global MHD model, *J. Geophys. Res.*, *eFIRST* 29 June 2007, doi: 10.1029/2007JA012352.

117. Barabash, S., et al (with H. E. J. Koskinen), The Analyser of Space Plasmas and Energetic Atoms (ASPERA-4) for the Venus Express mission, *Planet. Space Sci.* 55, 1772–1792, 2007.
118. Barabash, S., et al. (with H. E. J. Koskinen), The loss of ions from Venus through the plasma wake, *Nature*, 450, 650-653, doi:10.1038/nature06434, 2007.
119. Martinecz, C., et al. (with H. E. J. Koskinen), Location of the bow shock and ion composition boundaries at Venus – initial determinations from Venus Express ASPERA-4, *Planet. Space Sci.*, 56, 780-784, doi:10.1016/j.pss.2007.07.007, 2008 .
120. Kallio, E., et al. (with H. E. J. Koskinen), The Venusian induced magnetosphere: A case study of plasma and magnetic field measurements on the Venus Express mission, *Planet. Space Sci.*, 56, 796-801, doi:10.1016/j.pss.2007.09.011, 2008.
121. Coates, A. J., et al. (with H. Koskinen), Ionospheric Photoelectrons at Venus: Initial Observations by ASPERA-4 ELS, *Planet. Space Sci.*, 56, 802-806, doi:10.1016/j.pss.2007.12.008, 2008.
122. Galli, A., et al. (with H. Koskinen), First observation of energetic neutral atoms in the Venus environment, *Planet. Space Sci.*, 56, 807-811, doi:10.1016/j.pss.2007.12.011, 2008.
123. Fedorov, A., et al. (with H. Koskinen), Comparative analysis of Venus and Mars magnetotails, *Planet. Space Sci.*, 56, 812-817, doi:10.1016/j.pss.2007.12.012, 2008.
124. Mura, A., et al. (with H. Koskinen), ENA detection in the dayside of Mars: ASPERA-3 NPD statistical study, *Planet. Space Sci.*, 56, doi:10.1016/j.pss.2007.12.013, 2008.
125. Futaana, Y., et al. (with H. E. J. Koskinen), Mars Express and Venus Express multi-point observations of geoeffective solar flare events in December 2006, *Planet. Space Sci.*, 56, 873-880, doi:10.1016/j.pss.2007.10.014, 2008.
126. Koskinen, H., Avaruussää: Auringon myrskyistä avaruusajan teknologisiin haasteisiin, *Bidrag till kännedom av Finlands natur och folk*, 180, 179-209, 2009.
127. Hietala, H., et al. (with H. E. J. Koskinen), Supermagnetosonic jets behind a collisionless quasiparallel shock, *Phys. Rev. Lett.*, 103, 245001, doi: 10.1103/PhysRevLett.103.245001, 2009.
128. Huovelin, J., et al. (with H. E. J. Koskinen), Solar Intensity X-ray and particle Spectrometer (SIXS), *Planet. Space Sci.*, 58, 96-107, doi:10.1016/j.pss.2008.11.007, 2010
129. Pulkkinen, T. I., et al. (with H. E. J. Koskinen), Magnetospheric modes and solar wind energy coupling efficiency, *J. Geophys. Res.*, 115, A03207, doi: 10.1029/2009JA014737, 2010.
130. Whittaker, I., et al. (with H. E. J. Koskinen), The Venusian Bow Shock as Seen by the ASPERA-4 Ion Instrument on Venus Express, *J. Geophys. Res.*, 115, A09224 doi:10.1029/2009JA014826, 2010.
131. Pulkkinen, T. I., Palmroth, M., Janhunen, P., Koskinen, H. E. J., McComas, D. J., Smith, C. W., Timing of changes in the solar wind energy input in relation to ionospheric response, *J. Geophys. Res.*, doi:10.1029/2010JA015764, 2010.
132. Palmroth, M., Koskinen, H. E. J., Pulkkinen, T. I., Toivanen, P. K., Janhunen, P., Milan, S. E., Lester, M., Magnetospheric feedback in solar wind energy transfer, *J. Geophys. Res.*, doi:10.1029/2010JA015746, 2010.
133. Palmroth, M, Koskinen, H.E. J., Pulkkinen, T. I., Anekallu, C. R., Laitinen, T. V., Lucek, E. A., and Dandouras, I., Quantifying energy transfer at the magnetopause, in *The Dynamic Magnetosphere*, edited by M. Fujimoto and W. Liu, pp. 29-37, Springer, 2011. ISBN 978-94-007-0500-5, DOI 10.1007/978-94-007-0501-2
134. Hietala, H., Agueda, N., Andréová, K., Vainio, R., Nylund, S., Kilpua, E. K. J., Koskinen, H. E. J., In situ observations of particle acceleration in shock-shock interaction, *J. Geophys. Res.*, 116, doi:10.1029/2011JA016669, 2011
135. Isavnin, A., Kilpua, E. K. J., Koskinen, H. E. J., Grad-Shafranov Reconstruction of Magnetic Clouds: Overview and Improvements, *Solar Physics*, 273, 205-219 doi:10.1007/s11207-011-9845-z, 2011
136. Berthomier, M., et al. (with Koskinen, H.), Alfvén: magnetosphere-ionosphere connection explorers, *Exp. Astron.*, 33, 445–489, doi: 10.1007/s10686-011-9273-y, 2012.
137. Hietala, H. et al. (with Koskinen, H. E. J.), Supermagnetosonic subsolar magnetosheath jets and their effects: from the solar wind to the ionospheric convection, *Ann. Geophys.*, 30, 33-48, doi:10.5194/angeo-30-33-2012, 2012.
138. Koskinen, H., Space Weather: From Solar Storms to the Technical Challenges of the Space Age, in *From the Earth's Core to Outer Space*, edited by. I. Haapala, Lecture notes in Earth Sciences., Vol 137, 265–278, doi: 10.1007/978-3-642-25550-2_19, 2012.

139. Andréevová, K., Kilpua, E. K. J., Hietala, H., Koskinen, H. E. J., Isavnin, A., Vainio, R., Analysis of the substructure within a complex magnetic cloud on 03-04 September, 2008, *Ann. Geophys.*, **31**, 555–562, doi:10.5194/angeo-31-555-2013, 2013.
140. Hoilijoki, S., Pomoell, J., Vainio, R., Palmroth, M., and Koskinen, H. E. J., Interpreting solar EUV wave observations from different viewing angles using an MHD model, *Solar Physics*, doi: 10.1007/s11207-013-0276-x, 2013.
141. Anekallu, C. R., Palmroth, M., Koskinen, H. E. J., Lucek, E., Dandouras, I., Spatial variation of energy conversion at the Earth's magnetopause: Statistics from Cluster observations, *J. Geophys. Res.*, **118**, doi:10.1002/jgra.50233, 2013.
142. Horne, R. B., Glauert, S. A., Meredith, N. P., Koskinen, H., Vainio, R., Afanasiev, A., Ganushkina, N., Amariutei, O., Boscher, D., Sicard, A., Maget, V., Poedts, S., Jacobs, C., Sanahuja, B., Aran, A., Heynderickx, D., Pitchford, D., Forecasting the Earth's radiation belts and modeling solar energetic particle events: Recent results from SPACAST, *J. Space Weather Space Clim.*, **3**, doi: http://dx.doi.org/10.1051/swsc/2013042, 2013.
143. Kilpua, E. K. J., Isavnin, A., Vourlidas, A., Koskinen, H. E. J., Rodriguez, L., On the relationship between interplanetary coronal mass ejections and magnetic clouds, *Ann. Geophys.*, **31**, 1251–1265, doi:10.5194/angeo-31-1251-2013, 2013.
144. Kilpua, E. K. J., Hietala, H., Koskinen, H. E. J., Fontaine, D., Turc, L., Magnetic field and dynamic pressure ULF fluctuations in coronal mass ejection-driven sheath regions, *Ann. Geophys.*, **31**, 1559–1567, doi:10.5194/angeo-31-1559-2013, 2013.
145. Kempf, Y., Pokhotelov, D., von Alfthan, S., Vaivads, A., Palmroth, M., Koskinen, H. E. J., Wave dispersion in the hybrid-Vlasov model: Verification of Vlasiator, *Physics of Plasmas*, **20**, 112114, http://dx.doi.org/10.1063/1.4835315, 2013.
146. Pokhotelov, D., von Alfthan, S., Kempf, Y., Vainio, R., Koskinen, H. E. J., Palmroth, M., Ion distributions upstream and downstream of the Earth's bow shock: first results from Vlasiator, *Ann. Geophys.*, **31**, 2207–2212, doi:10.5194/angeo-31-2207-2013, 2013.
147. Vainio, R., Pönni, A., Battarbee, M., Koskinen, H. E. J., Afanasiev, A., Laitinen, T., A semi-analytical foreshock model for energetic storm particle events inside 1 AU, *J. Space Weather Space Clim.*, **4**, A08, DOI: 10.1051/swsc/2014005, 2014.
148. Andréevová, K., Juusola, L., Kilpua, E. K. J., Koskinen, H. E. J., Analysis of double-step response to and interplanetary shock in the dayside magnetosphere, *Ann. Geophys.*, **32**, 1293–1302, doi: 10.5194/angeo-32-1293-2014, 2014.
149. Nilsson, H., Stenberg-Wieser, G., Behar, E., Wedlund, C. S., Gunell, H., Yamauchi, M., Lundin R., Barabash, S., Wieser, M., Carr, C., Cupido, E., Burch, J., Fedorov, A., Sauvaud, J. A., Koskinen, H., Kallio, E., Lebreton, J.-P., Eriksson, A., Edberg, N., Glassmeier, K.-H., Goldstein R., Henri, P., Koenders, C., Mokashi, P., Nemeth, Z., Richter, I., Szegő, K., Vallat, C., Rubin, M., Birth of comet magnetosphere: A spring of water ions, *Science*, **347**, DOI: 10.1126/science.aaa0571, 2015.
150. Kilpua, E. K. J., Hietala, H., Turner, D. L., Koskinen, H. E. J., Pulkkinen, T. I., Rodriguez, J. V., Reeves, G. D., Claudepierre, S. G., Spence, H. E., Unraveling the drivers of the storm-time radiation belt response, *Geophys. Res. Lett.*, **42**, doi:10.1002/2015GL063542, 2015.
151. Kilpua, E. K. J., Lumme, E., Andréevová, K., Isavnin, A., Koskinen, H. E. J., Properties and drivers of fast interplanetary shocks near the orbit of the Earth (1995-2013), *J. Geophys. Res.*, doi: 10.1002/2015JA021138, 2015.
152. Nilsson, H., Stenberg-Wieser, G., Behar, E., Wedlund, C. S., Kallio, E., Gunell, H., Edberg, N., Eriksson, A. I., Yamauchi, M., Koenders, C., Wieser, M., Lundin R., Barabash, S., Mandt, K., Burch, J. L., Goldstein, R., Mokashi, P., Carr, C., Cupido, E., Fox, P. T., Szegő, K., Nemeth, Z., Fedorov, A., Sauvaud, J. A., Koskinen, H., Richter, I., Lebreton, J.-P., Henri, P., Volwerk, M., Vallat, C., Geiger, B., Evolution of the ion environment of comet 67P/Churyumov-Gerasimenko; Observations between 3.6 and 2.2 AU, *Astron. Astrophys.*, **538**, doi: 10.1051/0004-6361/201526142, 2015.

37 non-refereed scientific articles

11 published technical / program reports

53 popular articles, book reviews, editorials

40 invited talks at scientific conferences