S C Buchert

List of Publications by Year
in descending order

123 papers	3,673 citations	159585 30 h-index	161849 54 g-index
153 all docs	153 docs citations	153 times ranked	2382 citing authors

#	Article	IF	Citations
1	THE CLUSTER MAGNETIC FIELD INVESTIGATION. Space Science Reviews, 1997, 79, 65-91.	8.1	287
2	Structure of the Magnetic Reconnection Diffusion Region from Four-Spacecraft Observations. Physical Review Letters, 2004, 93, 105001.	7.8	193
3	Thermal ion imagers and Langmuir probes in the Swarm electric field instruments. Journal of Geophysical Research: Space Physics, 2017, 122, 2655-2673.	2.4	183
4	Temporal evolution of the electric field accelerating electrons away from the auroral ionosphere. Nature, 2001, 414, 724-727.	27.8	132
5	In situ multi-satellite detection of coherent vortices as a manifestation of AlfvÃ©nic turbulence. Nature, 2005, 436, 825-828.	27.8	124
6	Calibration and Validation of Swarm Plasma Densities and Electron Temperatures Using Groundâ€Based Radars and Satellite Radio Occultation Measurements. Radio Science, 2018, 53, 15-36.	1.6	95
7	Cluster observations of lower hybrid turbulence within thin layers at the magnetopause. Geophysical Research Letters, 2004, 31, .	4.0	92
8	Structure of the separatrix region close to a magnetic reconnection X-line: Cluster observations. Geophysical Research Letters, 2006, 33, .	4.0	88
9	Slow Magnetosonic Solitons Detected by the Cluster Spacecraft. Physical Review Letters, 2003, 90, 085002.	7.8	83
10	On the proper motion of auroral arcs. Journal of Geophysical Research, 1993, 98, 6087-6099.	3.3	77
11	Thin electron-scale layers at the magnetopause. Geophysical Research Letters, 2004, 31, .	4.0	68
12	SWARM observations of equatorial electron densities and topside GPS track losses. Geophysical Research Letters, 2015, 42, 2088-2092.	4.0	66
13	Swarm in situ observations of F region polar cap patches created by cusp precipitation. Geophysical Research Letters, 2015, 42, 996-1003.	4.0	66
14	Concerning the generation of geomagnetic giant pulsations by drift-bounce resonance ring current instabilities. Annales Geophysicae, 1999, 17, 338-350.	1.6	63
15	Effects on magnetic reconnection of a density asymmetry across the current sheet. Annales Geophysicae, 2008, 26, 2471-2483.	1.6	63
16	The science case for the EISCAT_3D radar. Progress in Earth and Planetary Science, 2015, 2, .	3.0	60
17	Simultaneous EISCAT Svalbard radar and DMSP observations of ion upflow in the dayside polar ionosphere. Journal of Geophysical Research, 2003, 108, .	3.3	59
18	Magnetosheath Plasma Turbulence and Its Spatiotemporal Evolution as Observed by the Cluster Spacecraft. Physical Review Letters, 2008, 100, 205003.	7.8	55

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19	Steve: The Optical Signature of Intense Subauroral Ion Drifts. Geophysical Research Letters, 2019, 46, 6279-6286.	4.0	51
20	Simultaneous EISCAT Svalbard and VHF radar observations of ion upflows at different aspect angles. Geophysical Research Letters, 2000, 27, 81-84.	4.0	50
21	Multi-spacecraft determination of wave characteristics near the proton gyrofrequency in high-altitude cusp. Annales Geophysicae, 2005, 23, 983-995.	1.6	47
22	Characteristics of ion upflow and downflow observed with the European Incoherent Scatter Svalbard radar. Journal of Geophysical Research, 2009, 114, .	3.3	47
23	Effects of a kappa distribution function of electrons on incoherent scatter spectra. Annales Geophysicae, 2000, 18, 1216-1223.	1.6	45
24	Observation of polar cap patches and calculation of gradient drift instability growth times: A Swarm case study. Geophysical Research Letters, 2015, 42, 201-206.	4.0	43
25	Concerning long-term geomagnetic variations and space climatology. Annales Geophysicae, 2004, 22, 3669-3677.	1.6	42
26	Optical and radar observations of the motion of auroral arcs. Journal of Atmospheric and Solar-Terrestrial Physics, 1996, 58, 57-69.	0.9	39
27	Temporal evolution of two auroral arcs as measured by the Cluster satellite and coordinated ground-based instruments. Annales Geophysicae, 2004, 22, 4089-4101.	1.6	39
28	Optical and radar observations of auroral arcs with emphasis on small-scale structures. Journal of Atmospheric and Solar-Terrestrial Physics, 1996, 58, 71-83.	0.9	37
29	Intense high-altitude auroral electric fields - temporal and spatial characteristics. Annales Geophysicae, 2004, 22, 2485-2495.	1.6	31
30	Energy conversion regions as observed by Cluster in the plasma sheet. Journal of Geophysical Research, 2011, 116, n/a-n/a.	3.3	31
31	Characteristics of quasi-static potential structures observed in the auroral return current region by Cluster. Nonlinear Processes in Geophysics, 2004, 11, 709-720.	1.3	30
32	Magnetospheric energy budget during huge geomagnetic activity using Cluster and ground-based data. Journal of Geophysical Research, 2006, 111, .	3.3	30
33	Upper atmosphere cooling over the past 33 years. Geophysical Research Letters, 2014, 41, 5629-5635.	4.0	30
34	Properties of fast magnetosonic shocklets at the bow shock. Geophysical Research Letters, 2003, 30, .	4.0	29
35	Multiâ€point electric field measurements of Short Largeâ€Amplitude Magnetic Structures (SLAMS) at the Earth's quasiâ€parallel bow shock. Geophysical Research Letters, 2003, 30, .	4.0	27
36	What high altitude observations tell us about the auroral acceleration: A Cluster/DMSP conjunction. Geophysical Research Letters, 2003, 30, .	4.0	27

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37	Solar activity dependence of ion upflow in the polar ionosphere observed with the European Incoherent Scatter (EISCAT) TromsÃ¸ UHF radar. Journal of Geophysical Research, 2010, 115, .	3.3	27
38	A model for the electric fields and currents during a strong Ps 6 pulsation event. Journal of Geophysical Research, 1990, 95, 3733-3743.	3.3	26
39	Separating spatial and temporal variations in auroral electric and magnetic fields by Cluster multipoint measurements. Annales Geophysicae, 2004, 22, 2463-2472.	1.6	26
40	Lower-thermosphereâ€“ionosphere (LTI) quantities: current status of measuring techniques and models. Annales Geophysicae, 2021, 39, 189-237.	1.6	25
41	Daedalus: a low-flying spacecraft for in situ exploration of the lower thermosphereâ€“ionosphere. Geoscientific Instrumentation, Methods and Data Systems, 2020, 9, 153-191.	1.6	25
42	Ion upflow and downflow at the topside ionosphere observed by the EISCAT VHF radar. Annales Geophysicae, 2000, 18, 170-181.	1.6	24
43	Modulated reconnection rate and energy conversion at the magnetopause under steady IMF conditions. Geophysical Research Letters, 2008, 35, .	4.0	24
44	Coordinated EISCAT Svalbard radar and Reimei satellite observations of ion upflows and suprathermal ions. Journal of Geophysical Research, 2008, 113, .	3.3	24
45	The evolution of flux pileup regions in the plasma sheet: Cluster observations. Journal of Geophysical Research: Space Physics, 2013, 118, 6279-6290.	2.4	24
46	Solar radio emission as a disturbance of aeronautical radionavigation. Journal of Space Weather and Space Climate, 2018, 8, A42.	3.3	24
47	Magnetometer and incoherent scatter observations of an intense Ps 6 pulsation event. Journal of Atmospheric and Solar-Terrestrial Physics, 1988, 50, 357-367.	0.9	23
48	Experimental investigation of auroral generator regions with conjugate Cluster and FAST data. Annales Geophysicae, 2006, 24, 619-635.	1.6	23
49	Observations of concentrated generator regions in the nightside magnetosphere by Cluster/FAST conjunctions. Annales Geophysicae, 2006, 24, 637-649.	1.6	23
50	Detection of currents and associated electric fields in Titan's ionosphere from Cassini data. Journal of Geophysical Research, 2011, 116, n/a-n/a.	3.3	23
51	Observations of auroral broadband emissions by CLUSTER. Geophysical Research Letters, 2003, 30, .	4.0	22
52	Cluster observations of high-frequency waves in the exterior cusp. Annales Geophysicae, 2004, 22, 2403-2411.	1.6	22
53	Mean winds, tides, and quasi-2 day wave in the polar lower thermosphere observed in European Incoherent Scatter (EISCAT) 8 day run data in November 2003. Journal of Geophysical Research, 2005, 110, .	3.3	22
54	Towards understanding the electrodynamics of the 3-dimensional high-latitude ionosphere: present and future. Annales Geophysicae, 2008, 26, 3913-3932.	1.6	22

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55	Evidence for the braking of flow bursts as they propagate toward the Earth. Journal of Geophysical Research: Space Physics, 2014, 119, 9004-9018.	2.4	22
56	Ionospheric Response at Conjugate Locations During the 7â€“8 September 2017 Geomagnetic Storm Over the Europeâ€African Longitude Sector. Journal of Geophysical Research: Space Physics, 2020, 125, e2020JA028307.	2.4	22
57	Ionospheric conductance distribution and MHD wave structure: observation and model. Annales Geophysicae, 1998, 16, 140-147.	1.6	21
58	Extreme solar-terrestrial events of October 2003: High-latitude and Cluster observations of the large geomagnetic disturbances on 30 October. Journal of Geophysical Research, 2005, 110, .	3.3	21
59	Storm Time Global Observations of Largeâ€Scale TIDs From Groundâ€Based and In Situ Satellite Measurements. Journal of Geophysical Research: Space Physics, 2018, 123, 711-724.	2.4	21
60	Relative contribution of ionospheric conductivity and electric field to ionospheric current. Journal of Geophysical Research, 2002, 107, SIA 20-1.	3.3	19
61	Scale sizes of intense auroral electric fields observed by Cluster. Annales Geophysicae, 2007, 25, 2413-2425.	1.6	19
62	The role of the inner tail to midtail plasma sheet in channeling solar wind power to the ionosphere. Journal of Geophysical Research, 2012, 117, .	3.3	19
63	A dayside plasma depletion observed at midlatitudes during quiet geomagnetic conditions. Geophysical Research Letters, 2015, 42, 967-974.	4.0	19
64	Generation of atmospheric gravity waves associated with auroral activity in the polarFregion. Journal of Geophysical Research, 2001, 106, 18543-18554.	3.3	18
65	Plasma density suppression process around the cusp revealed by simultaneous CUTLASS and EISCAT Svalbard radar observations. Journal of Geophysical Research, 2001, 106, 5551-5564.	3.3	18
66	On the statistical relation between ion upflow and naturally enhanced ion-acoustic lines observed with the EISCAT Svalbard radar. Journal of Geophysical Research, 2011, 116, .	3.3	18
67	Field-aligned current distributions generated by a divergent Hall current. Geophysical Research Letters, 1997, 24, 297-300.	4.0	17
68	Ionospheric conductivity modulation in ULF pulsations. Journal of Geophysical Research, 1999, 104, 10119-10133.	3.3	17
69	Observations of diverging field-aligned ion flow with the ESR. Annales Geophysicae, 2004, 22, 889-899.	1.6	17
70	Naturally enhanced ion-acoustic lines at high altitudes. Annales Geophysicae, 2006, 24, 3351-3364.	1.6	17
71	Traits of sub-kilometre F-region irregularities as seen with the Swarm satellites. Annales Geophysicae, 2020, 38, 243-261.	1.6	17
72	Incoherent scatter radar spectrum distortions from intense auroral turbulence. Journal of Geophysical Research, 1993, 98, 9459-9471.	3.3	16

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73	Comparison of local energy conversion estimates from Cluster with global MHD simulations. Geophysical Research Letters, 2008, 35, .	4.0	16
74	In situ evidence for interplanetary magnetic field induced tail twisting associated with relative displacement of conjugate auroral features. Journal of Geophysical Research, 2011, 116, n/a-n/a.	3.3	16
75	Simultaneous high- and low-latitude reconnection: ESR and DMSP observations. Annales Geophysicae, 2002, 20, 1311-1320.	1.6	15
76	Transient reconnection in the cusp during strongly negative IMFBy. Journal of Geophysical Research, 2004, 109, .	3.3	14
77	On the source of the polar wind in the polar topside ionosphere: First results from the EISCAT Svalbard radar. Geophysical Research Letters, 2009, 36, .	4.0	14
78	Localized field-aligned currents in the polar cap associated with airglow patches. Journal of Geophysical Research: Space Physics, 2016, 121, 10,172-10,189.	2.4	14
79	Occurrence and location of concentrated load and generator regions observed by Cluster in the plasma sheet. Annales Geophysicae, 2009, 27, 4131-4146.	1.6	14
80	Solar Flux Influence on the Inâ€Situ Plasma Density at Topside Ionosphere Measured by Swarm Satellites. Journal of Geophysical Research: Space Physics, 2022, 127, .	2.4	14
81	A statistical study of intense electric fields at 4â^'7 R_{<i>E</i>} geocentric distance using Cluster. Annales Geophysicae, 2005, 23, 2579-2588.	1.6	13
82	Naturally enhanced ion acoustic fluctuations seen at different wavelengths. Journal of Geophysical Research, 2001, 106, 21503-21515.	3.3	11
83	Energy input from the exterior cusp into the ionosphere: Correlated ground-based and satellite observations. Geophysical Research Letters, 2007, 34, .	4.0	11
84	The Pedersen current carried by electrons: a non-linear response of the ionosphere to magnetospheric forcing. Annales Geophysicae, 2008, 26, 2837-2844.	1.6	11
85	Westward tilt of lowâ€latitude plasma blobs as observed by the Swarm constellation. Journal of Geophysical Research: Space Physics, 2015, 120, 3187-3197.	2.4	11
86	Swarm Langmuir probes' data quality validation and future improvements. Geoscientific Instrumentation, Methods and Data Systems, 2022, 11, 149-162.	1.6	11
87	First measurements of tidal modes in the lower thermosphere by the EISCAT Svalbard radar. Geophysical Research Letters, 2000, 27, 931-934.	4.0	9
88	An unusual giant spiral arc in the polar cap region during the northward phase of a Coronal Mass Ejection. Annales Geophysicae, 2007, 25, 507-517.	1.6	9
89	Swarm Satellite and EISCAT Radar Observations of a Plasma Flow Channel in the Auroral Oval Near Magnetic Midnight. Journal of Geophysical Research: Space Physics, 2018, 123, 5140-5158.	2.4	9
90	Ionospheric irregularities and scintillations: a direct comparison of in situ density observations with ground-based L-band receivers. Earth, Planets and Space, 2020, 72, .	2.5	9

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91	Simultaneous ground-based and in situ Swarm observations of equatorial F-region irregularities over Jicamarca. Annales Geophysicae, 2020, 38, 1063-1080.	1.6	9
92	Magneto-optical Kerr effect for a dissipative plasma. Journal of Plasma Physics, 1998, 59, 39-55.	2.1	8
93	Effect of electrojet irregularities on DC current flow. Journal of Geophysical Research, 2006, 111, .	3.3	8
94	Statistical Analysis of Pc1 Wave Ducting Deduced From Swarm Satellites. Journal of Geophysical Research: Space Physics, 2021, 126, e2020JA029016.	2.4	8
95	Field-aligned ion motions in theEandFregions. Journal of Geophysical Research, 2002, 107, SIA 1-1.	3.3	7
96	Dynamics and characteristics of electric-field structures in the auroral return current region observed by Cluster. Physica Scripta, 2006, T122, 34-43.	2.5	7
97	Plasma angular momentum effects and twisted incoherent scatter radar beams. Radio Science, 2012, 47, .	1.6	7
98	Relationship between auroral substorm and ion upflow in the nightside polar ionosphere. Journal of Geophysical Research: Space Physics, 2013, 118, 7426-7437.	2.4	7
99	Swarm and ESR observations of the ionospheric response to a fieldâ€aligned current system in the highâ€latitude midnight sector. Geophysical Research Letters, 2015, 42, 4270-4279.	4.0	7
100	Isolated Proton Aurora Driven by EMIC Pc1 Wave: PWING, Swarm, and NOAA POES Multiâ€Instrument Observations. Geophysical Research Letters, 2021, 48, e2021GL095090.	4.0	7
101	Extreme ionospheric effects in the presence of high electric fields. Nature, 1988, 333, 438-440.	27.8	6
102	Occurrence of an ion-ion two-stream driven wave mode in the ionosphere. Advances in Space Research, 1996, 17, 235-240.	2.6	6
103	Observation of isotropic electron temperature in the turbulent E region. Annales Geophysicae, 2001, 19, 11-15.	1.6	6
104	Identification of broad-band waves above the auroral acceleration region: Cluster observations. Annales Geophysicae, 2004, 22, 4203-4216.	1.6	6
105	Effects of atmospheric oscillations on the field-aligned ion motions in the polar F-region. Annales Geophysicae, 2000, 18, 1154-1163.	1.6	5
106	Plasma transport along discrete auroral arcs and its contribution to the ionospheric plasma convection. Annales Geophysicae, 2008, 26, 3279-3293.	1.6	5
107	Estimating along-track plasma drift speed from electron density measurements by the three Swarm satellites. Annales Geophysicae, 2015, 33, 829-835.	1.6	5
108	Ionospheric Plasma Density Oscillation Related to EMIC Pc1 Waves. Geophysical Research Letters, 2020, 47, e2020GL089000.	4.0	5

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109	Constraining the Positive Ion Composition in Saturnâ€™s Lower Ionosphere with the Effective Recombination Coefficient. Planetary Science Journal, 2021, 2, 39.	3.6	4
110	Field-aligned currents and ionospheric parameters deduced from EISCAT radar measurements in the post-midnight sector. Annales Geophysicae, 2002, 20, 1335-1348.	1.6	3
111	Entangled dynamos and Joule heating in the Earth's ionosphere. Annales Geophysicae, 2020, 38, 1019-1030.	1.6	3
112	Frequency dependent power fluctuations: a feature of the ESR system or physical?. Annales Geophysicae, 2000, 18, 1224-1230.	1.6	2
113	Geomagnetic activity effects on plasma sheet energy conversion. Annales Geophysicae, 2010, 28, 1813-1825.	1.6	2
114	Investigation of energy transport and thermospheric upwelling during quiet magnetospheric and ionospheric conditions from the studies of low- and middle-altitude cusp. Annales Geophysicae, 2015, 33, 623-635.	1.6	2
115	MARSIS Observations of Fieldâ€Aligned Irregularities and Ducted Radio Propagation in the Martian Ionosphere. Journal of Geophysical Research: Space Physics, 2018, 123, 6251-6263.	2.4	2
116	Characteristics of fragmented aurora-like emissions (FAEs) observed on Svalbard. Annales Geophysicae, 2021, 39, 277-288.	1.6	2
117	A Small Peak in the Swarmâ€LP Plasma Density Data at the Dayside Dip Equator. Journal of Geophysical Research: Space Physics, 2022, 127, .	2.4	2
118	Auroral-arc splitting by intrusion of a new convection channel. Annales Geophysicae, 1996, 14, 1257-1264.	1.6	1
119	Ion-dispersion and rapid electron fluctuations in the cusp: a case study. Annales Geophysicae, 2008, 26, 2485-2502.	1.6	1
120	First results from the Langmuir Probes on the Swarm satellites. , 2014, , .		1
121	On the Pedersen Current Which is Carried by Electrons. Astrophysics and Space Science Library, 1998, , 485-489.	2.7	1
122	Non-Maxwellian ion velocity distributions and their effects on the interpretation of the incoherent scatter spectra. Advances in Space Research, 1992, 12, 235-239.	2.6	0
123	Preface "The Twelfth EISCAT International Workshop". Annales Geophysicae, 2006, 24, 2331-2331.	1.6	0