Nicholas Deutscher

List of Publications by Year
in descending order

123 papers	7,737 citations	61984 43 h-index	66911 78 g-index
216 all docs	216 docs citations	216 times ranked	4303 citing authors

#	Article	IF	Citations
1	Key challenges for tropospheric chemistry in the Southern Hemisphere. Elementa, 2022, 10, .	3.2	7
2	Australian Fire Emissions of Carbon Monoxide Estimated by Global Biomass Burning Inventories: Variability and Observational Constraints. Journal of Geophysical Research D: Atmospheres, 2022, 127, .	3.3	6
3	An 11-year record of XCO₂ estimates derived from GOSAT measurements using the NASA ACOS version 9 retrieval algorithm. Earth System Science Data, 2022, 14, 325-360.	9.9	17
4	Nitrous Oxide Profiling from Infrared Radiances (NOPIR): Algorithm Description, Application to 10 Years of IASI Observations and Quality Assessment. Remote Sensing, 2022, 14, 1810.	4.0	0
5	On the consistency of methane retrievals using the Total Carbon Column Observing Network (TCCON) and multiple spectroscopic databases. Atmospheric Measurement Techniques, 2022, 15, 2377-2406.	3.1	3
6	Improved calibration procedures for the EM27/SUN spectrometers of the COllaborative Carbon Column Observing Network (COCCON). Atmospheric Measurement Techniques, 2022, 15, 2433-2463.	3.1	10
7	Retrieval of greenhouse gases from GOSAT and GOSAT-2 using the FOCAL algorithm. Atmospheric Measurement Techniques, 2022, 15, 3401-3437.	3.1	10
8	Interannual variability in the Australian carbon cycle over 2015â€“2019, based on assimilation of Orbiting Carbon Observatory-2 (OCO-2) satellite data. Atmospheric Chemistry and Physics, 2022, 22, 8897-8934.	4.9	5
9	Methane retrieved from TROPOMI: improvement of the data product and validation of the first 2 years of measurements. Atmospheric Measurement Techniques, 2021, 14, 665-684.	3.1	104
10	Performance of an open-path near-infrared measurement system for measurements of CO₂ and CH₄ during extended field trials. Atmospheric Measurement Techniques, 2021, 14, 3119-3130.	3.1	2
11	XCO₂ retrieval for GOSAT and GOSAT-2 based on the FOCAL algorithm. Atmospheric Measurement Techniques, 2021, 14, 3837-3869.	3.1	15
12	Characterizing model errors in chemical transport modeling of methane: using GOSAT XCH₄ data with weak-constraint four-dimensional variational data assimilation. Atmospheric Chemistry and Physics, 2021, 21, 9545-9572.	4.9	14
13	The Adaptable 4A Inversion (5AI): description and first <i>X</i>_{CO₂} retrievals from Orbiting Carbon Observatory-2 (OCO-2) observations. Atmospheric Measurement Techniques, 2021, 14, 4689-4706.	3.1	5
14	2019â€“20 Australian Bushfires and Anomalies in Carbon Monoxide Surface and Column Measurements. Atmosphere, 2021, 12, 755.	2.3	5
15	Validation of methane and carbon monoxide from Sentinel-5 Precursor using TCCON and NDACC-IRWG stations. Atmospheric Measurement Techniques, 2021, 14, 6249-6304.	3.1	57
16	Was Australia a sink or source of CO₂ in 2015? Data assimilation using OCO-2 satellite measurements. Atmospheric Chemistry and Physics, 2021, 21, 17453-17494.	4.9	8
17	The Carbon Cycle of Southeast Australia During 2019â€“2020: Drought, Fires, and Subsequent Recovery. AGU Advances, 2021, 2, .	5.4	21
18	Bias Correction of the Ratio of Total Column CH4 to CO2 Retrieved from GOSAT Spectra. Remote Sensing, 2020, 12, 3155.	4.0	2

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19	Toward High Precision XCO₂Retrievals From TanSat Observations: Retrieval Improvement and Validation Against TCCON Measurements. Journal of Geophysical Research D: Atmospheres, 2020, 125, e2020JD032794.	3.3	25
20	Validation of Carbon Trace Gas Profile Retrievals from the NOAA-Unique Combined Atmospheric Processing System for the Cross-Track Infrared Sounder. Remote Sensing, 2020, 12, 3245.	4.0	23
21	Spectral sizing of a coarse-spectral-resolution satellite sensor for XCO₂. Atmospheric Measurement Techniques, 2020, 13, 731-745.	3.1	3
22	Improved Constraints on Northern Extratropical CO₂ Fluxes Obtained by Combining Surfaceâ€Based and Spaceâ€Based Atmospheric CO₂ Measurements. Journal of Geophysical Research D: Atmospheres, 2020, 125, e2019JD032029.	3.3	26
23	Ensemble-based satellite-derived carbon dioxide and methane column-averaged dry-air mole fraction data sets (2003â€“2018) for carbon and climate applications. Atmospheric Measurement Techniques, 2020, 13, 789-819.	3.1	22
24	A decade of GOSAT Proxy satellite CH₄ observations. Earth System Science Data, 2020, 12, 3383-3412.	9.9	53
25	Characterizing model errors in chemical transport modeling of methane: impact of model resolution in versions v9-02 of GEOS-Chem and v35j of its adjoint model. Geoscientific Model Development, 2020, 13, 3839-3862.	3.6	27
26	Validation of XCO₂ and XCH₄ retrieved from a portable Fourier transform spectrometer with those from in situ profiles from aircraft-borne instruments. Atmospheric Measurement Techniques, 2020, 13, 5149-5163.	3.1	3
27	Bayesian atmospheric tomography for detection and quantification of methane emissions: application to data from the 2015 Ginninderra release experiment. Atmospheric Measurement Techniques, 2019, 12, 4659-4676.	3.1	4
28	Emissions of methane in Europe inferred by total column measurements. Atmospheric Chemistry and Physics, 2019, 19, 3963-3980.	4.9	10
29	Simultaneous shipborne measurements of CO₂, CH₄ and CO and their application to improving greenhouse-gas flux estimates in Australia. Atmospheric Chemistry and Physics, 2019, 19, 7055-7072.	4.9	5
30	An intercomparison of total column-averaged nitrous oxide between ground-based FTIR TCCON and NDACC measurements at seven sites and comparisons with the GEOS-Chem model. Atmospheric Measurement Techniques, 2019, 12, 1393-1408.	3.1	17
31	Building the COllaborative Carbon Column Observing Network (COCCON): long-term stability and ensemble performance of the EM27/SUN Fourier transform spectrometer. Atmospheric Measurement Techniques, 2019, 12, 1513-1530.	3.1	82
32	Evaluation and Analysis of the Seasonal Cycle and Variability of the Trend from GOSAT Methane Retrievals. Remote Sensing, 2019, 11, 882.	4.0	17
33	Evaluation of Bias Correction Methods for GOSAT SWIR XH2O Using TCCON data. Remote Sensing, 2019, 11, 290.	4.0	2
34	Evaluation of MOPITT VersionÂ7 joint TIRâ€“NIR X_{CO} retrievals with TCCON. Atmospheric Measurement Techniques, 2019, 12, 5547-5572.	3.1	21
35	A scientific algorithm to simultaneously retrieve carbon monoxide and methane from TROPOMI onboard Sentinel-5 Precursor. Atmospheric Measurement Techniques, 2019, 12, 6771-6802.	3.1	71
36	Satellite and ground-based measurements of XCO₂ in aÂremote semiarid region of Australia. Earth System Science Data, 2019, 11, 935-946.	9.9	18

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37	The Ginninderra CH4 and CO2 release experiment: An evaluation of gas detection and quantification techniques. International Journal of Greenhouse Gas Control, 2018, 70, 202-224.	4.6	49
38	Philippines TCCON Project: One-year Measurement Results and Future. , 2018, , .		0
39	Global land mapping of satellite-observed CO₂ total columns using spatio-temporal geostatistics. International Journal of Digital Earth, 2017, 10, 426-456.	3.9	33
40	EOF-based regression algorithm for the fast retrieval of atmospheric CO2 total column amount from the GOSAT observations. Journal of Quantitative Spectroscopy and Radiative Transfer, 2017, 189, 258-266.	2.3	9
41	Global satellite observations of column-averaged carbon dioxide and methane: The GHG-CCI XCO2 and XCH4 CRDP3 data set. Remote Sensing of Environment, 2017, 203, 276-295.	11.0	52
42	Consistent regional fluxes of CH₄ and CO₂ inferred from GOSAT proxy XCH₄â€¯:â€¯XCO₂ retrievals, 2010â€“2014. Atmospheric Chemistry and Physics, 2017, 17, 4781-4797.	4.9	52
43	Validation of GOSAT SWIR XCO₂ and XCH₄ Retrieved by PPDF-S Method and Comparison with Full Physics Method. Scientific Online Letters on the Atmosphere, 2017, 13, 168-173.	1.4	6
44	Contributions of the troposphere and stratosphere to CH₄ model biases. Atmospheric Chemistry and Physics, 2017, 17, 13283-13295.	4.9	7
45	Study of the footprints of short-term variation in XCO₂ observed by TCCON sites using NIES and FLEXPART atmospheric transport models. Atmospheric Chemistry and Physics, 2017, 17, 143-157.	4.9	10
46	The arctic seasonal cycle of total column CO₂ and CH₄ from ground-based solar and lunar FTIR absorption spectrometry. Atmospheric Measurement Techniques, 2017, 10, 2397-2411.	3.1	4
47	TCCON Philippines: First Measurement Results, Satellite Data and Model Comparisons in Southeast Asia. Remote Sensing, 2017, 9, 1228.	4.0	22
48	Improved method for linear carbon monoxide simulation and sourceÂattribution in atmospheric chemistry models illustratedÂusingÂGEOS-Chem v9. Geoscientific Model Development, 2017, 10, 4129-4144.	3.6	29
49	Comparisons of the Orbiting Carbon Observatory-2 (OCO-2) <i>X</i>_{CO₂} measurements with TCCON. Atmospheric Measurement Techniques, 2017, 10, 2209-2238.	3.1	25
50	Total Carbon Column Observing Network Philippines: Toward Quantifying Atmospheric Carbon in Southeast Asia. Climate Disaster and Development Journal, 2017, 2, 1-12.	0.1	8
51	The Total Carbon Column Observing Network site description for Lauder, New Zealand. Earth System Science Data, 2017, 9, 977-992.	9.9	24
52	Retrieval of xCO₂ from ground-based mid-infrared (NDACC) solar absorption spectra and comparison to TCCON. Atmospheric Measurement Techniques, 2016, 9, 577-585.	3.1	18
53	Bias corrections of GOSAT SWIR XCO₂ and XCH₄ with TCCON data and their evaluation using aircraft measurement data. Atmospheric Measurement Techniques, 2016, 9, 3491-3512.	3.1	40
54	Evaluation of column-averaged methane in models and TCCON with a focus on the stratosphere. Atmospheric Measurement Techniques, 2016, 9, 4843-4859.	3.1	23

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55	Consistent evaluation of ACOS-GOSAT, BESD-SCIAMACHY, CarbonTracker, and MACC through comparisons to TCCON. Atmospheric Measurement Techniques, 2016, 9, 683-709.	3.1	80
56	Comparison of XH2O Retrieved from GOSAT Short-Wavelength Infrared Spectra with Observations from the TCCON Network. Remote Sensing, 2016, 8, 414.	4.0	20
57	Seasonal variability of stratospheric methane: implications for constraining tropospheric methane budgets using total column observations. Atmospheric Chemistry and Physics, 2016, 16, 14003-14024.	4.9	24
58	Towards understanding the variability in biospheric CO₂Âfluxes: using FTIR spectrometry and a chemical transport model to investigate the sources and sinks of carbonyl sulfide and its link to CO₂. Atmospheric Chemistry and Physics, 2016, 16, 2123-2138.	4.9	20
59	Estimates of European uptake of CO₂ inferred from GOSAT X_{CO₂} retrievals: sensitivity to measurement bias inside and outside Europe. Atmospheric Chemistry and Physics, 2016, 16, 1289-1302.	4.9	77
60	Ability of the 4-D-Var analysis of the GOSAT BESD XCO₂ retrievals to characterize atmospheric CO₂ at large and synoptic scales. Atmospheric Chemistry and Physics, 2016, 16, 1653-1671.	4.9	38
61	Source and meteorological influences on air quality (CO, CH4 & CO2) at a Southern Hemisphere urban site. Atmospheric Environment, 2016, 126, 274-289.	4.1	46
62	Improving atmospheric CO2 retrievals using line mixing and speed-dependence when fitting high-resolution ground-based solar spectra. Journal of Molecular Spectroscopy, 2016, 323, 15-27.	1.2	10
63	Positive trends in Southern Hemisphere carbonyl sulfide. Geophysical Research Letters, 2015, 42, 9473-9480.	4.0	20
64	Moist processes during MJO events as diagnosed from water isotopic measurements from the IASI satellite. Journal of Geophysical Research D: Atmospheres, 2015, 120, 10,619-10,636.	3.3	9
65	Does GOSAT capture the true seasonal cycle of carbon dioxide?. Atmospheric Chemistry and Physics, 2015, 15, 13023-13040.	4.9	63
66	Estimating global and North American methane emissions with high spatial resolution using GOSAT satellite data. Atmospheric Chemistry and Physics, 2015, 15, 7049-7069.	4.9	225
67	Consistent satellite XCO₂ retrievals from SCIAMACHY and GOSAT using the BESD algorithm. Atmospheric Measurement Techniques, 2015, 8, 2961-2980.	3.1	45
68	Assessing 5 years of GOSAT Proxy XCH₄ data and associated uncertainties. Atmospheric Measurement Techniques, 2015, 8, 4785-4801.	3.1	64
69	Using XCO₂ retrievals for assessing the long-term consistency of NDACC/FTIR data sets. Atmospheric Measurement Techniques, 2015, 8, 1555-1573.	3.1	39
70	Validation of SCIAMACHY HDO/H₂O measurements using the TCCON and NDACC-MUSICA networks. Atmospheric Measurement Techniques, 2015, 8, 1799-1818.	3.1	17
71	The Greenhouse Gas Climate Change Initiative (GHG-CCI): Comparison and quality assessment of near-surface-sensitive satellite-derived CO2 and CH4 global data sets. Remote Sensing of Environment, 2015, 162, 344-362.	11.0	112
72	The impact of spectral resolution on satellite retrieval accuracy of CO₂ and CH₄. Atmospheric Measurement Techniques, 2014, 7, 1105-1119.	3.1	6

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73	Multistation intercomparison of column-averaged methane from NDACC and TCCON: impact of dynamical variability. Atmospheric Measurement Techniques, 2014, 7, 4081-4101.	3.1	22
74	Derivation of tropospheric methane from TCCON CH₄ and HF total column observations. Atmospheric Measurement Techniques, 2014, 7, 2907-2918.	3.1	28
75	The Greenhouse Gas Climate Change Initiative (GHG-CCI): comparative validation of GHG-CCI SCIAMACHY/ENVISAT and TANSO-FTS/GOSAT CO₂ and CH₄ retrieval algorithm products with measurements from the TCCON. Atmospheric Measurement Techniques, 2014, 7, 1723-1744.	3.1	70
76	Retrieval of tropospheric column-averaged CH₄ mole fraction by solar absorption FTIR-spectrometry using N₂O as a proxy. Atmospheric Measurement Techniques, 2014, 7, 3295-3305.	3.1	23
77	Tropospheric CH₄ signals as observed by NDACC FTIR at globally distributed sites and comparison to GAW surface in situ measurements. Atmospheric Measurement Techniques, 2014, 7, 2337-2360.	3.1	38
78	Satellite-inferred European carbon sink larger than expected. Atmospheric Chemistry and Physics, 2014, 14, 13739-13753.	4.9	83
79	Inferring regional sources and sinks of atmospheric CO₂ from GOSAT XCO₂ data. Atmospheric Chemistry and Physics, 2014, 14, 3703-3727.	4.9	120
80	Drivers of column-average CO₂ variability at Southern Hemispheric Total Carbon Column Observing Network sites. Atmospheric Chemistry and Physics, 2014, 14, 9883-9901.	4.9	18
81	Forecasting global atmospheric CO₂. Atmospheric Chemistry and Physics, 2014, 14, 11959-11983.	4.9	74
82	Simultaneous retrieval of atmospheric CO₂ and light path modification from space-based spectroscopic observations of greenhouse gases: methodology and application to GOSAT measurements over TCCON sites. Applied Optics, 2013, 52, 1339.	1.8	15
83	First intercalibration of column-averaged methane from the Total Carbon Column Observing Network and the Network for the Detection of Atmospheric Composition Change. Atmospheric Measurement Techniques, 2013, 6, 397-418.	3.1	24
84	Improvement of the retrieval algorithm for GOSAT SWIR XCO₂ and XCH₄ and their validation using TCCON data. Atmospheric Measurement Techniques, 2013, 6, 1533-1547.	3.1	261
85	HDO/H₂O ratio retrievals from GOSAT. Atmospheric Measurement Techniques, 2013, 6, 599-612.	3.1	45
86	Evaluation of seasonal atmosphereâ€“biosphere exchange estimations with TCCON measurements. Atmospheric Chemistry and Physics, 2013, 13, 5103-5115.	4.9	28
87	Effects of atmospheric light scattering on spectroscopic observations of greenhouse gases from space. Part 2: Algorithm intercomparison in the GOSAT data processing for CO₂ retrievals over TCCON sites. Journal of Geophysical Research D: Atmospheres, 2013, 118, 1493-1512.	3.3	46
88	The covariation of Northern Hemisphere summertime CO₂ with surface temperature in boreal regions. Atmospheric Chemistry and Physics, 2013, 13, 9447-9459.	4.9	42
89	Simulations of column-averaged CO₂ and CH₄ using the NIES TM with a hybrid sigma-isentropic (Ïƒ-Î¸) vertical coordinate. Atmospheric Chemistry and Physics, 2013, 13, 1713-1732.	4.9	42
90	Impact of aerosol and thin cirrus on retrieving and validating XCO₂ from GOSAT shortwave infrared measurements. Journal of Geophysical Research D: Atmospheres, 2013, 118, 4887-4905.	3.3	111

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91	Improved water vapour spectroscopy in the 4174â€“4300 cm^{â^'1} region and its impact on SCIAMACHY HDO/H₂O measurements. Atmospheric Measurement Techniques, 2013, 6, 879-894.	3.1	30
92	A Fourier transform infrared trace gas and isotope analyser for atmospheric applications. Atmospheric Measurement Techniques, 2012, 5, 2481-2498.	3.1	161
93	SCIAMACHY WFM-DOAS <i>X</i>CO₂: reduction of scattering related errors. Atmospheric Measurement Techniques, 2012, 5, 2375-2390.	3.1	23
94	CH₄, CO, and H₂O spectroscopy for the Sentinel-5 Precursor mission: an assessment with the Total Carbon Column Observing Network measurements. Atmospheric Measurement Techniques, 2012, 5, 1387-1398.	3.1	26
95	Ground-based remote sensing of tropospheric water vapour isotopologues within the project MUSICA. Atmospheric Measurement Techniques, 2012, 5, 3007-3027.	3.1	69
96	The ACOS CO₂ retrieval algorithm â€“ Part II: Global X_{CO₂} data characterization. Atmospheric Measurement Techniques, 2012, 5, 687-707.	3.1	320
97	Satellite evidence for a large source of formic acid from boreal and tropical forests. Nature Geoscience, 2012, 5, 26-30.	12.9	171
98	Automated ground-based remote sensing measurements of greenhouse gases at the BiaÅ‚ystok site in comparison with collocated in situ measurements and model data. Atmospheric Chemistry and Physics, 2012, 12, 6741-6755.	4.9	25
99	Atmospheric greenhouse gases retrieved from SCIAMACHY: comparison to ground-based FTS measurements and model results. Atmospheric Chemistry and Physics, 2012, 12, 1527-1540.	4.9	86
100	Technical Note: Latitude-time variations of atmospheric column-average dry air mole fractions of CO₂, CH₄ and N₂O. Atmospheric Chemistry and Physics, 2012, 12, 7767-7777.	4.9	25
101	Effects of atmospheric light scattering on spectroscopic observations of greenhouse gases from space: Validation of PPDFâ€based CO₂ retrievals from GOSAT. Journal of Geophysical Research, 2012, 117, .	3.3	42
102	On the potential of the 2041â€“2047nm spectral region for remote sensing of atmospheric CO2 isotopologues. Journal of Quantitative Spectroscopy and Radiative Transfer, 2012, 113, 2009-2017.	2.3	15
103	Processâ€evaluation of tropospheric humidity simulated by general circulation models using water vapor isotopologues: 1. Comparison between models and observations. Journal of Geophysical Research, 2012, 117, .	3.3	114
104	Methane retrievals from Greenhouse Gases Observing Satellite (GOSAT) shortwave infrared measurements: Performance comparison of proxy and physics retrieval algorithms. Journal of Geophysical Research, 2012, 117, .	3.3	128
105	Atmospheric carbon dioxide retrieved from the Greenhouse gases Observing SATellite (GOSAT): Comparison with groundâ€based TCCON observations and GEOSâ€Chem model calculations. Journal of Geophysical Research, 2012, 117, .	3.3	139
106	Retrieval of atmospheric CO₂with enhanced accuracy and precision from SCIAMACHY: Validation with FTS measurements and comparison with model results. Journal of Geophysical Research, 2011, 116, .	3.3	153
107	Methane observations from the Greenhouse Gases Observing SATellite: Comparison to groundâ€based TCCON data and model calculations. Geophysical Research Letters, 2011, 38, .	4.0	211
108	Toward accurate CO₂and CH₄observations from GOSAT. Geophysical Research Letters, 2011, 38, n/a-n/a.	4.0	355

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109	Global CO₂fluxes inferred from surface air-sample measurements and from TCCON retrievals of the CO₂total column. Geophysical Research Letters, 2011, 38, n/a-n/a.	4.0	85
110	The Australian methane budget: Interpreting surface and train-borne measurements using a chemistry transport model. Journal of Geophysical Research, 2011, 116, .	3.3	36
111	Calibration of TCCON column-averaged CO₂: the first aircraft campaign over European TCCON sites. Atmospheric Chemistry and Physics, 2011, 11, 10765-10777.	4.9	120
112	A method for evaluating bias in global measurements of CO₂ total columns from space. Atmospheric Chemistry and Physics, 2011, 11, 12317-12337.	4.9	279
113	Importance of secondary sources in the atmospheric budgets of formic and acetic acids. Atmospheric Chemistry and Physics, 2011, 11, 1989-2013.	4.9	266
114	Preliminary validation of column-averaged volume mixing ratios of carbon dioxide and methane retrieved from GOSAT short-wavelength infrared spectra. Atmospheric Measurement Techniques, 2011, 4, 1061-1076.	3.1	217
115	The importance of transport model uncertainties for the estimation of CO₂ sources and sinks using satellite measurements. Atmospheric Chemistry and Physics, 2010, 10, 9981-9992.	4.9	98
116	Validation of five years (2003â€“2007) of SCIAMACHY CO total column measurements using ground-based spectrometer observations. Atmospheric Measurement Techniques, 2010, 3, 1457-1471.	3.1	31
117	Total column CO₂ measurements at Darwin, Australia â€“ site description and calibration against in situ aircraft profiles. Atmospheric Measurement Techniques, 2010, 3, 947-958.	3.1	131
118	Calibration of the Total Carbon Column Observing Network using aircraft profile data. Atmospheric Measurement Techniques, 2010, 3, 1351-1362.	3.1	441
119	Trainâ€borne measurements of tropical methane enhancements from ephemeral wetlands in Australia. Journal of Geophysical Research, 2010, 115, .	3.3	8
120	Trace gas emissions from savanna fires in northern Australia. Journal of Geophysical Research, 2010, 115, .	3.3	51
121	Dynamic Processes Governing Lower-Tropospheric HDO/H ₂ O Ratios as Observed from Space and Ground. Science, 2009, 325, 1374-1377.	12.6	187
122	Reducing the impact of source brightness fluctuations on spectra obtained by Fourier-transform spectrometry. Applied Optics, 2007, 46, 4774.	2.1	80
123	Trace gas emissions from biomass burning inferred from aerosol optical depth. Geophysical Research Letters, 2004, 31, n/a-n/a.	4.0	34