Andrei Nikitin

List of Publications by Year
in descending order

120	14,578	57758 44	19749 117
papers	citations	h-index	g-index

123	123	123	7711
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	The HITRAN 2008 molecular spectroscopic database. Journal of Quantitative Spectroscopy and Radiative Transfer, 2009, 110, 533-572.	2.3	3,129
2	The HITRAN2016 molecular spectroscopic database. Journal of Quantitative Spectroscopy and Radiative Transfer, 2017, 203, 3-69.	2.3	2,840
3	The HITRAN2012 molecular spectroscopic database. Journal of Quantitative Spectroscopy and Radiative Transfer, 2013, 130, 4-50.	2.3	2,810
4	The HITRAN2020 molecular spectroscopic database. Journal of Quantitative Spectroscopy and Radiative Transfer, 2022, 277, 107949.	2.3	770
5	The 2015 edition of the GEISA spectroscopic database. Journal of Molecular Spectroscopy, 2016, 327, 31-72.	1.2	311
6	The 2009 edition of the GEISA spectroscopic database. Journal of Quantitative Spectroscopy and Radiative Transfer, 2011, 112, 2395-2445.	2.3	306
7	The 1997 spectroscopic GEISA databank. Journal of Quantitative Spectroscopy and Radiative Transfer, 1999, 62, 205-254.	2.3	237
8	The GEISA spectroscopic database: Current and future archive for Earth and planetary atmosphere studies. Journal of Quantitative Spectroscopy and Radiative Transfer, 2008, 109, 1043-1059.	2.3	161
9	Global analysis of the high resolution infrared spectrum of methane 12CH4 in the region from 0 to 4800cmâ¯1. Chemical Physics, 2009, 356, 131-146.	1.9	156
10	The 2003 edition of the GEISA/IASI spectroscopic database. Journal of Quantitative Spectroscopy and Radiative Transfer, 2005, 95, 429-467.	2.3	146
11	TheoReTS â€“ An information system for theoretical spectra based on variational predictions from molecular potential energy and dipole moment surfaces. Journal of Molecular Spectroscopy, 2016, 327, 138-158.	1.2	122
12	Methane line parameters in the HITRAN2012 database. Journal of Quantitative Spectroscopy and Radiative Transfer, 2013, 130, 201-219.	2.3	121
13	Methane line parameters in HITRAN. Journal of Quantitative Spectroscopy and Radiative Transfer, 2003, 82, 219-238.	2.3	117
14	Accurate Spectroscopic Models for Methane Polyads Derived from a Potential Energy Surface Using High-Order Contact Transformations. Journal of Physical Chemistry A, 2013, 117, 13779-13805.	2.5	112
15	Rotational and vibrational energy levels of methane calculated from a new potential energy surface. Chemical Physics Letters, 2011, 501, 179-186.	2.6	99
16	Applications of a new set of methane line parameters to the modeling of Titanâ€™s spectrum in the 1.58Î¼m window. Planetary and Space Science, 2012, 61, 85-98.	1.7	99
17	Titanâ€™s surface and atmosphere from Cassini/VIMS data with updated methane opacity. Icarus, 2013, 226, 470-486.	2.5	92
18	An Accurate, Extensive, and Practical Line List of Methane for the HITEMP Database. Astrophysical Journal, Supplement Series, 2020, 247, 55.	7.7	92

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19	First principles intensity calculations of the methane rovibrational spectra in the infrared up to 9300 cmâ¯1. Physical Chemistry Chemical Physics, 2013, 15, 10049.	2.8	82
20	Complete nuclear motion Hamiltonian in the irreducible normal mode tensor operator formalism for the methane molecule. Journal of Chemical Physics, 2012, 136, 244106.	3.0	81
21	GOSAT-2009 methane spectral line list in the 5550â€“6236cmâ¯1 range. Journal of Quantitative Spectroscopy and Radiative Transfer, 2010, 111, 2211-2224.	2.3	79
22	Titan's 3-micron spectral region from ISO high-resolution spectroscopy. Icarus, 2006, 180, 176-185.	2.5	74
23	Improved Algorithms for the Modeling of Vibrational Polyads of Polyatomic Molecules: Application toT,O, andC3Molecules. Journal of Molecular Spectroscopy, 1997, 182, 72-84.	1.2	73
24	High resolution spectroscopy and the first global analysis of the Tetradecad region of methane 12CH4. Physical Chemistry Chemical Physics, 2013, 15, 10071.	2.8	73
25	The MIRS computer package for modeling the rovibrational spectra of polyatomic molecules. Journal of Quantitative Spectroscopy and Radiative Transfer, 2003, 82, 239-249.	2.3	72
26	THEORETICAL HOT METHANE LINE LISTS UP TOT= 2000 K FOR ASTROPHYSICAL APPLICATIONS. Astrophysical Journal, 2014, 789, 2.	4.5	72
27	Accurate Theoretical Methane Line Lists in the Infrared up to 3000 K and Quasi-continuum Absorption/Emission Modeling for Astrophysical Applications. Astrophysical Journal, 2017, 847, 105.	4.5	68
28	Comparison of line-by-line and band models of near-IR methane absorption applied to outer planet atmospheres. Icarus, 2012, 218, 1-23.	2.5	64
29	New dipole moment surfaces of methane. Chemical Physics Letters, 2013, 565, 5-11.	2.6	63
30	First assignment of the 5Î½4 and Î½2+4Î½4 band systems of 12CH4 in the 6287â€“6550cmâ¯1 region. Journal of Quantitative Spectroscopy and Radiative Transfer, 2011, 112, 28-40.	2.3	60
31	Extension of the MIRS computer package for the modeling of molecular spectra: From effective to full ab initio ro-vibrational Hamiltonians in irreducible tensor form. Journal of Quantitative Spectroscopy and Radiative Transfer, 2012, 113, 1034-1042.	2.3	60
32	Predictions for methane spectra from potential energy and dipole moment surfaces: Isotopic shifts and comparative study of 13CH4 and 12CH4. Journal of Molecular Spectroscopy, 2013, 291, 85-97.	1.2	60
33	Analysis of the CH3D Nonad from 2000 to 3300 cmâ¯1. Journal of Molecular Spectroscopy, 2002, 216, 225-251.	1.2	59
34	Ab initioro-vibrational Hamiltonian in irreducible tensor formalism: a method for computing energy levels from potential energy surfaces for symmetric-top molecules. Molecular Physics, 2010, 108, 2121-2135.	1.7	59
35	T.D.S. spectroscopic databank for spherical tops: DOS version. Journal of Quantitative Spectroscopy and Radiative Transfer, 1994, 52, 459-479.	2.3	57
36	Accurate first-principles calculations for 12CH3D infrared spectra from isotopic and symmetry transformations. Journal of Chemical Physics, 2014, 141, 044316.	3.0	57

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37	New assignments in the 2Î¼m transparency window of the 12CH4 Octad band system. Journal of Quantitative Spectroscopy and Radiative Transfer, 2013, 116, 101-109.	2.3	55
38	The infrared spectrum of CH 3 D between 900 and 3200 cm âˆ’1 : extended assignment and modeling. Journal of Molecular Structure, 2000, 517-518, 1-24.	3.6	51
39	The High Resolution Infrared Spectrum of CH3D in the Region 900â€“1700 cmâˆ’1. Journal of Molecular Spectroscopy, 1997, 184, 120-128.	1.2	50
40	Measurements of N2- and O2-broadening and shifting parameters of methane spectral lines in the 5550â€“6236cmâˆ’1 region. Journal of Quantitative Spectroscopy and Radiative Transfer, 2009, 110, 654-668.	2.3	50
41	GOSAT-2014 methane spectral line list. Journal of Quantitative Spectroscopy and Radiative Transfer, 2015, 154, 63-71.	2.3	48
42	A new accurate ground-state potential energy surface of ethylene and predictions for rotational and vibrational energy levels. Journal of Chemical Physics, 2014, 141, 104301.	3.0	47
43	New accurate theoretical line lists of 12CH4 and 13CH4 in the 0–13400 cm<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" altimg="si2.gif" overflow="scroll"><mml:msup><mml:mrow /><mml:mrow><mml:mo>−</mml:mo><mml:mn>1</mml:mn></mml:mrow></mml:msup></mml:math> range: Application to the modeling of methane absorption in Titan's atmosphere. Icarus, 2018, 303, 114-130.	2.5	47
44	Accurate line intensities of methane from first-principles calculations. Journal of Quantitative Spectroscopy and Radiative Transfer, 2017, 200, 90-99.	2.3	45
45	Convergence of normal mode variational calculations of methane spectra: Theoretical linelist in the icosad range computed from potential energy and dipole moment surfaces. Journal of Quantitative Spectroscopy and Radiative Transfer, 2015, 164, 207-220.	2.3	44
46	Absorption spectrum of deuterated water vapor enriched by 18O between 6000 and 9200cmâˆ’1. Journal of Quantitative Spectroscopy and Radiative Transfer, 2012, 113, 653-669.	2.3	43
47	First fullyab initiopotential energy surface of methane with a spectroscopic accuracy. Journal of Chemical Physics, 2016, 145, 114309.	3.0	43
48	Ab initio variational predictions for understanding highly congested spectra: rovibrational assignment of 108 new methane sub-bands in the icosad range (6280â€“7800 cm^{âˆ’1}). Physical Chemistry Chemical Physics, 2016, 18, 176-189.	2.8	42
49	Vibration energy levels of the PH3, PH2D, and PHD2 molecules calculated from high order potential energy surface. Journal of Chemical Physics, 2009, 130, 244312.	3.0	38
50	Isotopic substitution shifts in methane and vibrational band assignment in the 5560â€“6200 cmâˆ’1 region. Journal of Quantitative Spectroscopy and Radiative Transfer, 2009, 110, 964-973.	2.3	37
51	Refinements of the WKMC empirical line lists (5852â€“7919cmâˆ’1) for methane between 80K and 296K. Journal of Quantitative Spectroscopy and Radiative Transfer, 2012, 113, 1855-1873.	2.3	36
52	First Predictions of Rotationally Resolved Infrared Spectra of Dideuteromethane (¹²CH₂D₂) From Potential Energy and Dipole Moment Surfaces. Journal of Physical Chemistry A, 2015, 119, 4763-4779.	2.5	36
53	Total internal partition sums for the HITRAN2020 database. Journal of Quantitative Spectroscopy and Radiative Transfer, 2021, 271, 107713.	2.3	35
54	Preliminary analysis of CH3D from 3250 to 3700cmâˆ’1. Journal of Molecular Spectroscopy, 2006, 240, 14-25.	1.2	34

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55	Understanding global infrared opacity and hot bands of greenhouse molecules with low vibrational modes from first-principles calculations: the case of CF₄. Physical Chemistry Chemical Physics, 2018, 20, 21008-21033.	2.8	34
56	Global analysis of 12CH335Cl and 12CH337Cl: simultaneous fit of the lower five polyads (0â€“2600cmâ^'1). Journal of Molecular Spectroscopy, 2005, 230, 174-184.	1.2	33
57	Preliminary modeling of CH3D from 4000 to 4550 cmâ^'1. Journal of Quantitative Spectroscopy and Radiative Transfer, 2013, 114, 1-12.	2.3	33
58	An efficient method for energy levels calculation using full symmetry and exact kinetic energy operator: Tetrahedral molecules. Journal of Chemical Physics, 2015, 142, 094118.	3.0	33
59	New ground state constants of 12CH335Cl and 12CH337Cl from global polyad analysis. Journal of Molecular Spectroscopy, 2005, 230, 168-173.	1.2	32
60	High order dipole moment surfaces of PH3 and ab initio intensity predictions in the Octad range. Journal of Molecular Spectroscopy, 2014, 305, 40-47.	1.2	30
61	Measurements and modeling of long-path 12CH4 spectra in the 4800â€“5300cmâ^'1 region. Journal of Quantitative Spectroscopy and Radiative Transfer, 2014, 138, 116-123.	2.3	29
62	Analysis of the absorption spectrum of 12CH4 in the region 5855â€“6250 cmâ^'1 of the 2Î½3 band. Journal of Quantitative Spectroscopy and Radiative Transfer, 2017, 203, 341-348.	2.3	29
63	Ab initio effective rotational Hamiltonians: A comparative study. International Journal of Quantum Chemistry, 2012, 112, 2201-2220.	2.0	26
64	Accurate 12D dipole moment surfaces of ethylene. Chemical Physics Letters, 2015, 639, 275-282.	2.6	25
65	Assignment and modeling of the absorption spectrum of 13CH4 at 80 K in the region of the 2Î½3 band (5853â€“6201 cmâ^'1). Journal of Quantitative Spectroscopy and Radiative Transfer, 2016, 177, 170-180.	2.3	25
66	New measurements and global analysis of chloromethane in the region from 0 to 1800cmâ^'1. Journal of Molecular Spectroscopy, 2003, 221, 199-212.	1.2	23
67	First theoretical global line lists of ethylene (¹²C₂H₄) spectra for the temperature range 50â^'700 K in the far-infrared for quantification of absorption and emission in planetary atmospheres. Astronomy and Astrophysics, 2016, 594, A47.	5.1	23
68	Analyses and modeling of the 12CH4 spectrum at 80 K between 6539 and 6800 cmâ^'1. Journal of Quantitative Spectroscopy and Radiative Transfer, 2016, 168, 207-216.	2.3	23
69	Vibrational energy levels of methyl chloride calculated from full dimensional ab initio potential energy surface. Journal of Molecular Spectroscopy, 2008, 252, 17-21.	1.2	22
70	Spectroscopic line parameters of 12 CH 4 for atmospheric composition retrievals in the 4300â€“4500 cm â^'1 region. Journal of Quantitative Spectroscopy and Radiative Transfer, 2017, 186, 106-117.	2.3	21
71	Methane high-temperature partition function from contact transformations and variational calculations. Journal of Quantitative Spectroscopy and Radiative Transfer, 2015, 167, 53-63.	2.3	20
72	Measurements and modeling of long-path 12CH4 spectra in the 5300â€“5550â€¯cmâ^'1 region. Journal of Quantitative Spectroscopy and Radiative Transfer, 2017, 202, 255-264.	2.3	20

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73	Atlas of Experimental and Theoretical High-temperature Methane Cross Sections from TÂ=Â295 to 1000 K in the Near-infrared. Astrophysical Journal, Supplement Series, 2019, 240, 4.	7.7	20
74	Global modeling of the lower three polyads of PH3: Preliminary results. Journal of Molecular Spectroscopy, 2009, 256, 4-16.	1.2	19
75	Preliminary assignments of 2Î½3â€“Î½4 hot band of 12CH4 in the 2Î¼m transparency window from long-path FTS spectra. Journal of Molecular Spectroscopy, 2011, 268, 93-93.	1.2	18
76	Measurements and modeling of cold 13CH4 spectra in the 3750â€“4700 cmâ¯1 region. Journal of Quantitative Spectroscopy and Radiative Transfer, 2016, 174, 88-100.	2.3	18
77	The 13CH4 absorption spectrum in the Icosad range (6600â€“7692 cmâ¯1) at 80 K and 296 K: Empirical line lists and temperature dependence. Journal of Molecular Spectroscopy, 2016, 326, 115-121.	1.2	17
78	The methane absorption spectrum near 1.73â€Âμm (5695â€“5850 cmâ¯1): Empirical line lists at 80â€K and 296â€K and rovibrational assignments. Journal of Quantitative Spectroscopy and Radiative Transfer, 2018, 213, 169-177.	2.3	17
79	Towards a complete elucidation of the ro-vibrational band structure in the SF₆ infrared spectrum from full quantum-mechanical calculations. Physical Chemistry Chemical Physics, 2021, 23, 12115-12126.	2.8	17
80	Full-Dimensional Potential Energy and Dipole Moment Surfaces of GeH₄ Molecule and Accurate First-Principle Rotationally Resolved Intensity Predictions in the Infrared. Journal of Physical Chemistry A, 2016, 120, 8983-8997.	2.5	15
81	Rotational and vibrational energy levels of methyl fluoride calculated from a new potential energy surface. Journal of Molecular Spectroscopy, 2012, 274, 28-34.	1.2	14
82	Global modeling of NF3 line positions and intensities from far to mid-infrared up to 2200Âcmâ¯1. Journal of Quantitative Spectroscopy and Radiative Transfer, 2019, 239, 106668.	2.3	14
83	Analysis of PH3 spectra in the Octad range 2733â€“3660 cmâ¯1. Journal of Quantitative Spectroscopy and Radiative Transfer, 2017, 203, 472-479.	2.3	13
84	Assignment and modelling of 12CH4 spectra in the 5550â€“5695, 5718â€“5725 and 5792â€“5814Âcmâ¯1 regions. Journal of Quantitative Spectroscopy and Radiative Transfer, 2018, 219, 323-332.	2.3	13
85	2Î½3 Band of 12CF4 and Its Simultaneous Analysis with Î½3. Journal of Molecular Spectroscopy, 1995, 170, 431-448.	1.2	11
86	First Full-Dimensional Potential Energy and Dipole Moment Surfaces of SF₆. Journal of Physical Chemistry A, 2020, 124, 7014-7023.	2.5	11
87	A global view of isotopic effects on ro-vibrational spectra of six-atomic molecules: a case study of eleven ethylene species. Physical Chemistry Chemical Physics, 2020, 22, 3204-3216.	2.8	11
88	Improved line list of 12CH4 in the 3760â€“4100Âcmâ¯1 region. Journal of Quantitative Spectroscopy and Radiative Transfer, 2019, 225, 351-362.	2.3	10
89	Improved line list of 12CH4 in the 8850â€“9180 cmâ¯1 region. Journal of Quantitative Spectroscopy and Radiative Transfer, 2019, 239, 106646.	2.3	9
90	Vibrational levels of formaldehyde: Calculations from new high precision potential energy surfaces and comparison with experimental band origins. Journal of Quantitative Spectroscopy and Radiative Transfer, 2021, 260, 107478.	2.3	9

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91	Partition sums for non-local thermodynamic equilibrium conditions for nine molecules of importance in planetary atmospheres. Icarus, 2022, 378, 114947.	2.5	9
92	New Ab Initio Potential Energy Surfaces for NH₃ Constructed from Explicitly Correlated Coupled-Cluster Methods. Journal of Physical Chemistry A, 2021, 125, 10568-10579.	2.5	9
93	Improved spectroscopic line list of methyl chloride in the 1900â€“2600 cmâ^'1 spectral region. Journal of Quantitative Spectroscopy and Radiative Transfer, 2016, 177, 49-58.	2.3	8
94	Isotopic and symmetry breaking effects on phosphine spectra under H â†' D substitutions fromab initiovariational calculations. Journal of Chemical Physics, 2018, 149, 174305.	3.0	8
95	Modeling of vibrational energy levels of methane from the Ab initio constructed potential energy surface. Optics and Spectroscopy (English Translation of Optika I Spektroskopiya), 2009, 106, 176-182.	0.6	7
96	Symmetry effects in rotationally resolved spectra of bi-deuterated ethylene: Theoretical line intensities of cis, trans, and as-C2H2D2 isotopomers. Journal of Chemical Physics, 2019, 150, 194303.	3.0	7
97	Derivation of Ï•dependent coordinate transformations for nonrigid molecules in the Hougenâ€“Bunkerâ€“Johns formalism. Journal of Chemical Physics, 2020, 153, 084102.	3.0	7
98	<title>Global analysis of chloromethane: determinability of ground state constants</title>. , 2004, , .		6
99	First-principles calculations of infrared spectra for three ethylene isotopologues: 13C2H4, 13C12CH4 and 12C2H3D. Journal of Quantitative Spectroscopy and Radiative Transfer, 2019, 230, 142-154.	2.3	6
100	Line list of 12CH4 in the 4300â€“4600 cmâ^'1 region. Journal of Quantitative Spectroscopy and Radiative Transfer, 2020, 253, 107061.	2.3	6
101	Assignment and modeling of the 13CH4 cold absorption spectrum in the 5471â€“5852Âcmâ^'1 spectral range. Journal of Quantitative Spectroscopy and Radiative Transfer, 2019, 235, 278-286.	2.3	5
102	Line intensities of CH3D in the Triad region: 6â€“10Î¼m. Journal of Molecular Structure, 2004, 695-696, 181-188.	3.6	4
103	New efficient algorithm for the calculation of energy levels of AB₃type molecules. Molecular Physics, 2011, 109, 483-492.	1.7	4
104	An efficient code for calculation of the 6C, 9C and 12C symbols for , , and point groups. Computer Physics Communications, 2012, 183, 733-736.	7.5	4
105	The 13CH4 absorption spectrum at 80 K: Assignment and modeling of the lower part of the Tetradecad in the 4970â€“5470Âcmâ^'1 spectral range. Journal of Quantitative Spectroscopy and Radiative Transfer, 2018, 206, 306-312.	2.3	4
106	Highly excited vibrational levels of methane up to 10 300 cmâ^'1: Comparative study of variational methods. Journal of Chemical Physics, 2018, 149, 124305.	3.0	4
107	Line list for NF3 molecule in the 1750â€“1950Âcmâ^'1 region. Journal of Quantitative Spectroscopy and Radiative Transfer, 2019, 232, 10-19.	2.3	4
108	Matrix elements of vibration kinetic energy operator of tetrahedral molecules in non-orthogonal-dependent coordinates. Molecular Physics, 2018, 116, 44-53.	1.7	3

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109			