Robert R Gamache

List of Publications by Year
in descending order

73 papers	3,439 citations	109321 35 h-index	138484 58 g-index
73 all docs	73 docs citations	73 times ranked	1523 citing authors

#	Article	IF	Citations
1	Recommended isolated-line profile for representing high-resolution spectroscopic transitions (IUPAC) Tj ETQq1 1 0.784314 rgBT /Ove	1.9	225
2	IUPAC critical evaluation of the rotationalâ€“vibrational spectra of water vapor, Part III: Energy levels and transition wavenumbers for H216O. Journal of Quantitative Spectroscopy and Radiative Transfer, 2013, 117, 29-58.	2.3	215
3	IUPAC critical evaluation of the rotationalâ€“vibrational spectra of water vapor. Part Iâ€”Energy levels and transition wavenumbers for H217O and H218O. Journal of Quantitative Spectroscopy and Radiative Transfer, 2009, 110, 573-596.	2.3	188
4	Einstein A-coefficients and statistical weights for molecular absorption transitions in the HITRAN database. Journal of Quantitative Spectroscopy and Radiative Transfer, 2006, 98, 130-155.	2.3	179
5	IUPAC critical evaluation of the rotationalâ€“vibrational spectra of water vapor. Part II. Journal of Quantitative Spectroscopy and Radiative Transfer, 2010, 111, 2160-2184.	2.3	178
6	Total internal partition sums in the temperature range 70â€“3000 K: Atmospheric linear molecules. Journal of Molecular Spectroscopy, 1990, 142, 205-219.	1.2	141
7	Total internal partition sums for 166 isotopologues of 51 molecules important in planetary atmospheres: Application to HITRAN2016 and beyond. Journal of Quantitative Spectroscopy and Radiative Transfer, 2017, 203, 70-87.	2.3	122
8	New developments in the theory of pressure-broadening and pressure-shifting of spectral lines of H2O: The complex Robert-Bonamy formalism. Journal of Quantitative Spectroscopy and Radiative Transfer, 1998, 59, 319-335.	2.3	96
9	Collisional parameters of H2O lines: effects of vibration. Journal of Quantitative Spectroscopy and Radiative Transfer, 2004, 83, 119-147.	2.3	82
10	IUPAC critical evaluation of the rotationalâ€“vibrational spectra of water vapor. Part IV. Energy levels and transition wavenumbers for D216O, D217O, and D218O. Journal of Quantitative Spectroscopy and Radiative Transfer, 2014, 142, 93-108.	2.3	80
11	A database of water transitions from experiment and theory (IUPAC Technical Report). Pure and Applied Chemistry, 2014, 86, 71-83.	1.9	76
12	Reliable infrared line lists for 13 CO2 isotopologues up to Eâ€²=18,000cmâ^'1 and 1500K, with line shape parameters. Journal of Quantitative Spectroscopy and Radiative Transfer, 2014, 147, 134-144.	2.3	72
13	Theoretical calculations of N_2-broadened halfwidths of H_2O using quantum Fourier transform theory. Applied Optics, 1983, 22, 4013.	2.1	71
14	Current updates of the water-vapor line list in HITRAN: A new â€œDietâ€•for air-broadened half-widths. Journal of Quantitative Spectroscopy and Radiative Transfer, 2007, 108, 389-402.	2.3	71
15	Air-Broadened Half-Widths of the 22- and 183-GHz Water-Vapor Lines. IEEE Transactions on Geoscience and Remote Sensing, 2008, 46, 3601-3617.	6.3	71
16	Total internal partition sums to support planetary remote sensing. Icarus, 2011, 215, 391-400.	2.5	70
17	Extension of the HITRAN database to non-LTE applications. Journal of Quantitative Spectroscopy and Radiative Transfer, 1992, 48, 519-525.	2.3	64
18	Improved spectral parameters for the three most abundant isotopomers of the oxygen molecule. Journal of Quantitative Spectroscopy and Radiative Transfer, 1998, 59, 495-509.	2.3	64

#	Article	IF	Citations
19	An intercomparison of measured pressure-broadening and pressure-shifting parameters of water vapor. Canadian Journal of Chemistry, 2004, 82, 1013-1027.	1.1	62
20	Theoretical calculations of pressure broadening coefficients for H2O perturbed by Hydrogen or helium gas. Journal of Quantitative Spectroscopy and Radiative Transfer, 1996, 56, 471-487.	2.3	53
21	Line parameters including temperature dependences of self- and air-broadened line shapes of 12C16O2: 1.6-Î¼m region. Journal of Quantitative Spectroscopy and Radiative Transfer, 2016, 177, 117-144.	2.3	52
22	Temperature dependence of N2-broadened halfwidths of water vapor: The pure rotation and Î½2 bands. Journal of Molecular Spectroscopy, 1988, 128, 360-369.	1.2	51
23	Half-widths of , , , , and : I. Comparison between isotopomers. Journal of Quantitative Spectroscopy and Radiative Transfer, 2003, 78, 289-304.	2.3	49
24	Relaxation and Lineshape of the 500.4-GHz Line of Ozone Perturbed by N2 and O2. Journal of Molecular Spectroscopy, 2000, 204, 204-215.	1.2	46
25	N2-, O2-, and air-broadened half-widths, their temperature dependence, and line shifts for the rotation band of H216O. Journal of Molecular Spectroscopy, 2009, 257, 116-127.	1.2	46
26	Semiclassical calculations of half-widths and line shifts for transitions in the 30012â†00001 and 30013â†00001 bands of CO2. III: Self collisions. Journal of Quantitative Spectroscopy and Radiative Transfer, 2012, 113, 1536-1546.	2.3	45
27	Predicting accurate line shape parameters for CO2 transitions. Journal of Quantitative Spectroscopy and Radiative Transfer, 2013, 130, 158-171.	2.3	44
28	Theoretical N2-, O2-, and air-broadened halfwidths of 16O3 calculated by quantum Fourier transform theory with realistic collision dynamics. Journal of Molecular Spectroscopy, 1985, 109, 283-299.	1.2	43
29	Halfwidths and line shifts of water vapor broadened by CO2: measurements and complex Robert-Bonamy formalism calculations. Journal of Quantitative Spectroscopy and Radiative Transfer, 1997, 57, 485-496.	2.3	43
30	Semiclassical calculations of half-widths and line shifts for transitions in the 30012â†00001 and 30013â†00001 bands of CO2, I: Collisions with N2. Journal of Quantitative Spectroscopy and Radiative Transfer, 2012, 113, 976-990.	2.3	43
31	On the temperature dependence of half-widths and line shifts for molecular transitions in the microwave and infrared regions. Journal of Quantitative Spectroscopy and Radiative Transfer, 2018, 217, 440-452.	2.3	43
32	Pressure-broadening and pressure-shifting of spectral lines of ozone. Spectrochimica Acta - Part A: Molecular and Biomolecular Spectroscopy, 1998, 54, 35-63.	3.9	42
33	Line parameters including temperature dependences of air- and self-broadened line shapes of 12C16O2: 2.06-Î¼m region. Journal of Molecular Spectroscopy, 2016, 326, 21-47.	1.2	42
34	Semiclassical calculations of half-widths and line shifts for transitions in the 30012â†00001 and 30013â†00001 bands of CO2 II: Collisions with O2 and air. Journal of Quantitative Spectroscopy and Radiative Transfer, 2012, 113, 991-1003.	2.3	41
35	Half-widths, their temperature dependence, and line shifts for the HDOâ€“CO2 collision system for applications to CO2-rich planetary atmospheres. Icarus, 2011, 213, 720-730.	2.5	37
36	Temperature dependent pressure induced lineshape of O3 rotational transitions in air. Journal of Quantitative Spectroscopy and Radiative Transfer, 2004, 83, 63-81.	2.3	35

#	Article	IF	Citations
37	Lineshape parameters for water vapor in the 3.2â€“17.76Î¼m region for atmospheric applications. Journal of Molecular Spectroscopy, 2005, 229, 9-18.	1.2	35
38	Total internal partition sums for the HITRAN2020 database. Journal of Quantitative Spectroscopy and Radiative Transfer, 2021, 271, 107713.	2.3	35
39	Temperature dependence of N2-broadened halfwidths of ozone. Journal of Molecular Spectroscopy, 1985, 114, 31-41.	1.2	33
40	Theoretical N_2-broadened halfwidths of ^16O_3. Applied Optics, 1985, 24, 1651.	2.1	33
41	Self-broadening of water vapor transitions via the complex Robertâ€“Bonamy theory. Journal of Quantitative Spectroscopy and Radiative Transfer, 2007, 105, 148-163.	2.3	33
42	A spectral line list for water isotopologues in the 1100â€“4100 cmâ¯1 region for application to CO2-rich planetary atmospheres. Journal of Molecular Spectroscopy, 2016, 326, 144-150.	1.2	33
43	N2-, O2- and air-broadened half-widths and line shifts for transitions in the Î½3 band of methane in the 2726- to 3200-cmâ¯1 spectral region. Journal of Molecular Spectroscopy, 2008, 251, 268-281.	1.2	28
44	Measurements and Calculations of the Halfwidth of Two Rotational Transitions of Water Vapor Perturbed by N2, O2, and Air. Journal of Molecular Spectroscopy, 1999, 193, 233-243.	1.2	25
45	The vibrational dependence of half-widths of CO2 transitions broadened by N2, O2, air, and CO2. Journal of Quantitative Spectroscopy and Radiative Transfer, 2013, 117, 93-103.	2.3	25
46	An intercomparison of measured pressure-broadening, pressure shifting parameters of carbon dioxide and their temperature dependence. Journal of Quantitative Spectroscopy and Radiative Transfer, 2014, 135, 30-43.	2.3	24
47	Analytical Evaluation of the Maxwellâ€“Boltzmann Velocity Average in Pressure-Broadened Half-Width Calculations. Journal of Molecular Spectroscopy, 2001, 208, 79-86.	1.2	21
48	Half-widths of , and D216O: II. Comparison with measurement. Journal of Quantitative Spectroscopy and Radiative Transfer, 2003, 78, 305-318.	2.3	18
49	Recommended Ideal-Gas Thermochemical Functions for Heavy Water and its Substituent Isotopologues. Journal of Physical and Chemical Reference Data, 2017, 46, .	4.2	17
50	Line parameters for CO2- and self-broadening in the Î½3 band of HD16O. Journal of Quantitative Spectroscopy and Radiative Transfer, 2017, 203, 158-174.	2.3	17
51	Positions, intensities and line shape parameters for the 1â†0 bands of CO isotopologues. Journal of Quantitative Spectroscopy and Radiative Transfer, 2018, 218, 203-230.	2.3	14
52	Total internal partition sums for molecules of astrophysical interest. Journal of Quantitative Spectroscopy and Radiative Transfer, 2002, 74, 263-272.	2.3	13
53	Temperature dependent air-broadened linewidths of ozone rotational transitions. Journal of Molecular Spectroscopy, 2008, 251, 194-202.	1.2	13
54	Line parameters for CO2 broadening in the Î½2 band of HD16O. Journal of Quantitative Spectroscopy and Radiative Transfer, 2017, 187, 472-488.	2.3	13

#	Article	IF	Citations
55	Line shape parameters for the H2Oâ€“H2 collision system for application to exoplanet and planetary atmospheres. Icarus, 2018, 306, 275-284.	2.5	13
56	Self-broadened half-widths and self-induced line shifts for water vapor transitions in the 3.2â€“17.76Î¼m spectral region via complex Robertâ€“Bonamy theory. Journal of Molecular Spectroscopy, 2007, 243, 113-123.	1.2	12
57	Line parameters for CO2- and self-broadening in the Î½1 band of HD16O. Journal of Quantitative Spectroscopy and Radiative Transfer, 2017, 203, 133-157.	2.3	11
58	Modified complex Robert-Bonamy calculations of line shape parameters and their temperature dependence for water vapor in collision with N2. Journal of Quantitative Spectroscopy and Radiative Transfer, 2019, 228, 79-89.	2.3	10
59	Vibrational dependence, temperature dependence, and prediction of line shape parameters for the H2O-N2 collision system. Journal of Quantitative Spectroscopy and Radiative Transfer, 2020, 253, 107030.	2.3	10
60	Calculated Half-Widths and Line Shifts of Water Vapor Transitions in the 0.7-Î¼m Region and a Comparison with Published Data. Journal of Molecular Spectroscopy, 2001, 207, 254-262.	1.2	9
61	Line shape parameters of air-broadened water vapor transitions in the Î½1 and Î½3 spectral region. Journal of Molecular Spectroscopy, 2018, 348, 13-36.	1.2	9
62	Partition sums for non-local thermodynamic equilibrium conditions for nine molecules of importance in planetary atmospheres. Icarus, 2022, 378, 114947.	2.5	9
63	Energy transfer and inelastic collisions in ozone. Spectrochimica Acta - Part A: Molecular and Biomolecular Spectroscopy, 1998, 54, 65-76.	3.9	8
64	Partition sums for non-local thermodynamic equilibrium applications. Journal of Quantitative Spectroscopy and Radiative Transfer, 2002, 74, 273-284.	2.3	8
65	Vibrational dependence, temperature dependence, and prediction of line shape parameters for the H2O-H2 collision system. Icarus, 2019, 326, 186-196.	2.5	8
66	Multispectrum analysis of air-broadened spectra in the Î½3 Q branch of 12CH4. Journal of Quantitative Spectroscopy and Radiative Transfer, 2018, 206, 409-429.	2.3	7
67	Diode laser spectroscopic measurements and theoretical calculations of line parameters of nitrogen-broadened water vapor overtone transitions in the 818â€“834nm wavelength region. Journal of Molecular Spectroscopy, 2007, 242, 10-16.	1.2	6
68	Reduced matrix elements for collisionally induced transitions of 12CH4. Journal of Quantitative Spectroscopy and Radiative Transfer, 2019, 235, 31-39.	2.3	3
69	The electronic structure of hydroxyl molecules trapped in small neon clusters. Journal of Chemical Physics, 1981, 74, 5197-5215.	3.0	2
70	New visions of spectroscopic databases: An introduction to the special issue. Journal of Molecular Spectroscopy, 2016, 326, 1-4.	1.2	2
71	On the Way to Complex Robert-Bonamy Calculations of Self-, Nitrogen, Oxygen, and Air-Broadened Line Shape Parameters of CO[sub 2]. , 2010, , .		0
72	Reduced matrix elements in semi-classical line shape calculations: Application to H2O-H2. Journal of Physics: Conference Series, 2019, 1289, 012023.	0.4	0

#	Article	IF	Citations
73	Half-Widths and Line Shifts of Water Vapor for Atmospheric Applications: Measurement and Theory. , 2006, , 203-220.		0