Franck Thibault

List of Publications by Year in descending order

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#	Article	IF	CITATIONS
1	Collisional line-shape effects in accurate He-perturbed H <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" altimg="si1.svg"><mml:msub><mml:mrow /><mml:mn>2</mml:mn></mml:mrow </mml:msub> spectra. Journal of Quantitative Spectroscopy and Radiative Transfer, 2022, 277, 107951.</mml:math 	2.3	8
2	Rotational excitation of CO2 induced by He: New potential energy surface and scattering calculations. Journal of Chemical Physics, 2022, 156, 104303.	3.0	8
3	Collisional excitation of HNC by He found to be stronger than for structural isomer HCN in experiments at the low temperatures of interstellar space. Nature Chemistry, 2022, 14, 811-815.	13.6	8
4	The first comprehensive dataset of beyond-Voigt line-shape parameters from ab initio quantum scattering calculations for the HITRAN database: He-perturbed H <mml:math altimg="si11.svg" xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:msub><mml:mrow></mml:mrow>22</mml:msub></mml:math> case study. Journal of Quantitative Spectroscopy	2.3	21
5	and Radiative Transfer, 2021, 260, 107477. <i>Ab initio</i> investigation of the CO–N2 quantum scattering: The collisional perturbation of the pure rotational R(0) line in CO. Journal of Chemical Physics, 2021, 154, 054314.	3.0	8
6	Comb-calibrated Stimulated-Raman Spectroscopy of H2. , 2021, , .		0
7	CO-Ar collisions: ab initio model matches experimental spectra at a sub percent level over a wide pressure range. Journal of Quantitative Spectroscopy and Radiative Transfer, 2021, 272, 107807.	2.3	8
8	Fully quantum calculations of O2–N2 scattering using a new potential energy surface: Collisional perturbations of the oxygen 118ÂGHz fine structure line. Journal of Chemical Physics, 2021, 155, 124307.	3.0	13
9	Collisional line broadening and mixing in the Raman spectrum of CO perturbed by N2: Experimental measurements and theoretical calculations. Journal of Quantitative Spectroscopy and Radiative Transfer, 2021, 275, 107868.	2.3	5
10	Accurate calculations of beyond-Voigt line-shape parameters from first principles for the He-perturbed HD rovibrational lines: A comprehensive dataset in the HITRAN DPL format. Journal of Quantitative Spectroscopy and Radiative Transfer, 2021, 276, 107911.	2.3	9
11	Comb-referenced Stimulated Raman Spectrometer: Application to the Collisional Physics of H2. , 2021, ,		0
12	Evaluation of different parameterizations of temperature dependences of the line-shape parameters based on ab initio calculations: Case study for the HITRAN database. Journal of Quantitative Spectroscopy and Radiative Transfer, 2020, 240, 106676.	2.3	25
13	Fully quantum calculations of the line-shape parameters for the Hartmann-Tran profile: A CO-Ar case study. Journal of Quantitative Spectroscopy and Radiative Transfer, 2020, 243, 106803.	2.3	14
14	Subpercent agreement between <i>ab initio</i> and experimental collision-induced line shapes of carbon monoxide perturbed by argon. Physical Review A, 2020, 102, .	2.5	9
15	Ab initio calculations of collisional line–shape parameters and generalized spectroscopic cross-sections for rovibrational dipole lines in HD perturbed by He. Journal of Quantitative Spectroscopy and Radiative Transfer, 2020, 254, 107194.	2.3	8
16	Accurate deuterium spectroscopy and comparison with <i>ab initio</i> calculations. Physical Review A, 2020, 101, .	2.5	6
17	H2 -He collisions: Ab initio theory meets cavity-enhanced spectra. Physical Review A, 2020, 101, .	2.5	24
18	Ab initio quantum calculations of collisional effects in molecular spectra. Journal of Physics: Conference Series, 2020, 1412, 132040.	0.4	0

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19	Line-shape parameters for the first rotational lines of HD in He. Molecular Astrophysics, 2020, 19, 100063.	1.6	16
20	Ultrahigh finesse cavity-enhanced spectroscopy for accurate tests of quantum electrodynamics for molecules. Optics Letters, 2020, 45, 1603.	3.3	26
21	Ab initio investigation of the line-shape parameters for atmosphere-relevant molecular systems. Journal of Physics: Conference Series, 2020, 1412, 132033.	0.4	0
22	Ab initio line-shape parameters for speed-dependent hard-collision profiles: applications to rovibrational lines of H2, D2, HD in He or H2. Journal of Physics: Conference Series, 2019, 1289, 012004.	0.4	0
23	Room temperature line parameters of the self- and air-broadened fundamental vibrational transition of carbon monoxide: experimental results and calculations. Journal of Physics: Conference Series, 2019, 1289, 012014.	0.4	1
24	Line-shape parameters for pure rotational Raman lines of D2 in He. Journal of Physics: Conference Series, 2019, 1289, 012026.	0.4	0
25	Accurate wavenumber measurements for the <i>S</i> ₀ (0), <i>S</i> ₀ (1), and <i>S</i> ₀ (2) pure rotational Raman lines of D ₂ . Journal of Raman Spectroscopy, 2019, 50, 127-129.	2.5	15
26	Recent advances in collisional effects on spectra of molecular gases and their practical consequences. Journal of Quantitative Spectroscopy and Radiative Transfer, 2018, 213, 178-227.	2.3	85
27	Testing the ab initio quantumâ€scattering calculations for the D ₂ –He benchmark system with stimulated Raman spectroscopy. Journal of Raman Spectroscopy, 2018, 49, 1339-1349.	2.5	28
28	Accurate deuterium spectroscopy for fundamental studies. Journal of Quantitative Spectroscopy and Radiative Transfer, 2018, 213, 41-51.	2.3	54
29	Ab initio line-shape calculations for the S and O branches of H2 perturbed by He. Journal of Quantitative Spectroscopy and Radiative Transfer, 2018, 219, 313-322.	2.3	20
30	Room temperature self- and H2-broadened line parameters of carbon monoxide in the first overtone band: Theoretical and revised experimental results. Journal of Quantitative Spectroscopy and Radiative Transfer, 2017, 203, 309-324.	2.3	18
31	Ultra accurate measurements andab initiocalculations of collisional effects in pure D2 Journal of Physics: Conference Series, 2017, 810, 012042.	0.4	1
32	Rovibrational line-shape parameters for H2 in He and new H2-He potential energy surface. Journal of Quantitative Spectroscopy and Radiative Transfer, 2017, 202, 308-320.	2.3	42
33	Theoretical and revisited experimentally retrieved He-broadened line parameters of carbon monoxide in the fundamental band. Journal of Quantitative Spectroscopy and Radiative Transfer, 2016, 184, 322-340.	2.3	15
34	A test of H2-He potential energy surfaces. European Physical Journal D, 2016, 70, 1.	1.3	24
35	Strong competition between velocity-changing and phase- or state-changing collisions in <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:msub><mml:mi mathvariant="normal">H<mml:mn>2</mml:mn></mml:mi </mml:msub>spectra perturbed by Ar. Physical Review A. 2015, 91</mml:math 	2.5	27
36	Line interference effects using a refined Robert-Bonamy formalism: The test case of the isotropic Raman spectra of autoperturbed N2. Journal of Chemical Physics, 2014, 140, 084310.	3.0	14

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37	Line coupling effects in the isotropic Raman spectra of N2: A quantum calculation at room temperature. Journal of Chemical Physics, 2014, 140, 044303.	3.0	6
38	An experimental and theoretical study of nitrogen-broadened acetylene lines. Journal of Quantitative Spectroscopy and Radiative Transfer, 2014, 142, 17-24.	2.3	11
39	Velocity-changing collisions in pure H2 and H2-Ar mixture. Journal of Chemical Physics, 2014, 141, 074301.	3.0	30
40	Line mixing effects in isotropic Raman spectra of pure N2: A classical trajectory study. Journal of Chemical Physics, 2014, 141, 184306.	3.0	5
41	Low pressure line shape study of nitrogen-perturbed acetylene transitions in the ν ₁ + ν ₃ band over a range of temperatures. Canadian Journal of Physics, 2013, 91, 896-905.	1.1	6
42	An <i>ab initio</i> potential energy surface for the C ₂ H ₂ –N ₂ system. Molecular Physics, 2012, 110, 2761-2771.	1.7	6
43	Comparison of quantum, semi-classical and classical methods in the calculation of nitrogen self-broadened linewidths. Journal of Quantitative Spectroscopy and Radiative Transfer, 2012, 113, 1887-1897.	2.3	27
44	Collisional line widths of autoperturbed N2: Measurements and quantum calculations. Journal of Quantitative Spectroscopy and Radiative Transfer, 2011, 112, 2542-2551.	2.3	21
45	Collision-induced velocity changes from molecular dynamic simulations in H2–Ar: A test of the Keilson–Storer model and of line-broadening/shifting calculations for the Q(1) Raman line. Journal of Quantitative Spectroscopy and Radiative Transfer, 2011, 112, 1035-1042.	2.3	21
46	Comparison of classical, semiclassical and quantum methods in hydrogen broadening of acetylene lines. Journal of Quantitative Spectroscopy and Radiative Transfer, 2011, 112, 1429-1437.	2.3	17
47	Comparison of quantum, semiclassical and classical methods in hydrogen broadening of nitrogen lines. Journal of Quantitative Spectroscopy and Radiative Transfer, 2011, 112, 1942-1949.	2.3	17
48	Potential Energy Surfaces for C[sub 2]H[sub 2]â^'X Systems and Quantum Collisional Line Broadening. , 2010, , .		0
49	Experimental He-pressure broadening for the R(10) and P(2) lines in the ν3 band of 13CO2, and experimental pressure shifts for R(10) measured at several temperatures between 300K and 100K. Journal of Molecular Spectroscopy, 2009, 256, 102-108.	1.2	7
50	Experimental line broadening and line shift coefficients of the acetylene $\hat{1}/21 + \hat{1}/23$ band pressurized by hydrogen and deuterium and comparison with calculations. Journal of Molecular Spectroscopy, 2009, 256, 17-27.	1.2	16
51	A Bondâ^'Bond Description of the Intermolecular Interaction Energy: The Case of the Weakly Bound Acetyleneâ^'Hydrogen Complex. Journal of Physical Chemistry A, 2009, 113, 14867-14874.	2.5	15
52	Low-temperature inelastic collisions between hydrogen molecules and helium atoms. Journal of Chemical Physics, 2008, 128, 224308.	3.0	11
53	Linewidths of C2H2 perturbed by H2: experiments and calculations from an ab initio potential. Physical Chemistry Chemical Physics, 2008, 10, 5419.	2.8	43
54	Linewidths of C[sub 2]H[sub 2] perturbed by H[sub 2]: calculations from an ab initio potential and comparison with experimental results. , 2008, , .		0

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55	Collisional line widths of autoperturbed N[sub 2]: measurements and quantum calculations. , 2008, , .		0
56	Q-branch linewidths of N2 perturbed by H2: Experiments and quantum calculations from an ab initio potential. Journal of Chemical Physics, 2007, 126, 204302.	3.0	27
57	Inelastic collisions in molecular nitrogen at low temperature (2⩽T⩽50K). Journal of Chemical Physics, 2007, 127, 134305.	3.0	18
58	Intermolecular interaction potentials for the Ar–C2H2, Kr–C2H2, and Xe–C2H2 weakly bound complexes: Information from molecular beam scattering, pressure broadening coefficients, and rovibrational spectroscopy. Journal of Chemical Physics, 2007, 126, 064311.	3.0	23
59	Molecular-beam scattering and pressure broadening cross sections for the acetylene-neon system. European Physical Journal D, 2007, 44, 337-344.	1.3	11
60	Vibration-dependent trajectories and their effects on vibrational dephasing. Journal of Molecular Spectroscopy, 2007, 243, 105-112.	1.2	9
61	Broadening of the R(0) and P(2) lines in the 13CO fundamental by helium atoms from 300K down to 12K: Measurements and comparison with close-coupling calculations. Journal of Molecular Spectroscopy, 2007, 246, 118-125.	1.2	14
62	Dicke-Narrowed Line Shapes in CO-Ar: Measurements, Calculations, and a Revised Interpretation. AIP Conference Proceedings, 2006, , .	0.4	0
63	Collisional line shifting and broadening in the fundamental P-branch of CO in Ar between 214 and 324K. Journal of Molecular Spectroscopy, 2006, 235, 69-76.	1.2	27
64	Dicke-narrowed spectral line shapes of CO in Ar: Experimental results and a revised interpretation. Journal of Molecular Spectroscopy, 2006, 235, 54-68.	1.2	53
65	Rotranslational state-to-state rates and spectral representation of inelastic collisions in low-temperature molecular hydrogen. Journal of Chemical Physics, 2006, 125, 124301.	3.0	17
66	Theoretical He-broadening coefficients of infrared and Raman C2H2 lines and their temperature dependence. Journal of Molecular Spectroscopy, 2005, 234, 286-288.	1.2	17
67	Inelastic collisions in para-H2: Translation-rotation state-to-state rate coefficients and cross sections at low temperature and energy. Journal of Chemical Physics, 2005, 122, 064313.	3.0	41
68	Collision Cross Sections, Pressure-Broadening Coefficients and Second Virial Coefficients for the Acetylene-Argon Complex:Â Experiments and Calculations on a New Potential Energy Surface. Journal of Physical Chemistry A, 2005, 109, 8471-8480.	2.5	31
69	Experimental and theoretical study of line mixing in NH3 spectra. II. Effect of the perturber in infrared parallel bands. Journal of Chemical Physics, 2004, 120, 217-223.	3.0	23
70	Ar-Broadening of isotropic Raman lines in the \hat{l} /2 band of acetylene. Journal of Molecular Spectroscopy, 2004, 225, 48-54.	1.2	20
71	Argon broadening of the 13CO R(0) and R(7) transitions in the fundamental band at temperatures between 80 and 297K: comparison between experiment and theory. Journal of Molecular Spectroscopy, 2003, 222, 131-141.	1.2	21
72	Close coupling calculations for rotational relaxation of CO in argon: Accuracy of energy corrected sudden scaling procedures and comparison with experimental data. Journal of Chemical Physics, 2003, 119, 10563-10574.	3.0	19

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73	Experimental and theoretical determination of rotational-translational state-to-state rate constants for N2:He collisions at low temperature (3 <t<20 k). 118,="" 2003,="" 4477-4486.<="" chemical="" journal="" of="" physics,="" td=""><td>3.0</td><td>12</td></t<20 k).>	3.0	12
74	Experimental and theoretical study of line mixing in NH3 spectra. I. Scaling analysis of parallel bands perturbed by He. Journal of Chemical Physics, 2002, 116, 7544-7557.	3.0	26
75	Raman and infrared linewidths of CO in Ar. Journal of Chemical Physics, 2002, 117, 2523-2531.	3.0	38
76	Spectral line shape of theP(2)transition in CO-Ar: Uncorrelatedab initiocalculation. Physical Review A, 2002, 66, .	2.5	42
77	Shifting and broadening in the fundamental band of CO highly diluted in He and Ar: A comparison with theory. Journal of Chemical Physics, 2001, 115, 2198-2206.	3.0	61
78	Temperature dependence of line mixing effects in the stimulated Raman Q-branch of CO in He: A further test of close coupling calculations. Journal of Chemical Physics, 2001, 115, 7420-7428.	3.0	12
79	Shifts of helium and argon broadened CO lines: Asymmetry in line number m. AIP Conference Proceedings, 2001, , .	0.4	Ο
80	Experimental and theoretical CO2–Ar pressure-broadening cross sections and their temperature dependence. Physical Chemistry Chemical Physics, 2001, 3, 3924-3933.	2.8	46
81	Spectroscopic, collisional, and thermodynamic properties of the He–CO2 complex from an ab initio potential: Theoretical predictions and confrontation with the experimental data. Journal of Chemical Physics, 2001, 115, 3074-3084.	3.0	50
82	Experimental bandshapes of the ν 3 band of CH 3 F in helium: the role of interbranch and intrabranch line mixing. , 2000, 4063, 239.		0
83	Experimental and theoretical CO2–He pressure broadening cross sections. Physical Chemistry Chemical Physics, 2000, 2, 5404-5410.	2.8	29
84	Double scattering on the nucleus in the perturbative QCD. European Physical Journal C, 1999, 6, 343-348.	3.9	13
85	Spectral Lineshape Parameters Revisited for HF in a Bath of Argon. Journal of Molecular Spectroscopy, 1999, 198, 257-262.	1.2	15
86	Argon-broadened CO2 linewidths at high J values. Chemical Physics Letters, 1998, 284, 230-234.	2.6	10
87	Energy corrected sudden calculations of linewidths and line shapes based on coupled states cross sections: The test case of CO2–argon. Journal of Chemical Physics, 1998, 109, 6338-6345.	3.0	18
88	Collision-induced double transition effects in the 3ν3CO2band wing region. Journal of Chemical Physics, 1997, 106, 2067-2072.	3.0	4
89	Line broadening and band profile of CO2 in helium at 193 K. , 1997, , .		0
90	Infrared collision-induced absorption by O_2 near 6.4 μm for atmospheric applications: measurements and empirical modeling. Applied Optics, 1997, 36, 563.	2.1	45

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91	Line mixing effects in Q-branches of CO2 in helium near 4.7 μm: a further test of the ECS formalism. Journal of Quantitative Spectroscopy and Radiative Transfer, 1997, 57, 519-524.	2.3	3
92	Line-Mixing Effects inQBranches of CO2. Journal of Molecular Spectroscopy, 1997, 186, 256-268.	1.2	16
93	Measurements and empirical modeling of pure CO_2 absorption in the 23-μm region at room temperature: far wings, allowed and collision-induced bands. Applied Optics, 1996, 35, 4863.	2.1	59
94	Q-branch shapes of CO2 spectrum in 15 μm region: Experiment. Journal of Quantitative Spectroscopy and Radiative Transfer, 1996, 55, 321-334.	2.3	21
95	Line-mixing effects in the 3v3 band of CO2 perturbed by Ar. Journal of Quantitative Spectroscopy and Radiative Transfer, 1996, 55, 307-320.	2.3	18
96	Line mixing and line broadening in CO2 bands perturbed by helium at 193 K. Chemical Physics Letters, 1996, 263, 811-816.	2.6	3
97	Line mixing effects in the 15 μm Q-branches of CO2 in helium: Theoretical analysis. Journal of Quantitative Spectroscopy and Radiative Transfer, 1996, 56, 835-853.	2.3	19
98	Measurements of Argon-Induced Shifts in the 2-0 Band of CO. Journal of Molecular Spectroscopy, 1995, 171, 576-578.	1.2	10
99	Simple modelling of Q-branch absorption—I. Theoretical model and application to CO2 and N2O. Journal of Quantitative Spectroscopy and Radiative Transfer, 1995, 54, 705-722.	2.3	34
100	Line mixing effects in the 0003–0000 band of CO2 in helium. III. Energy corrected sudden simultaneous fit of linewidths and near wing profile. Journal of Chemical Physics, 1994, 101, 6552-6558.	3.0	26
101	Line mixing effects in the 00°3–00°0 band of CO2 in helium. I. Experiment. Journal of Chemical Physics, 1994, 100, 210-214.	3.0	17
102	Line mixing effects in the 00°3–00°0 band of CO2 in helium. II. Theoretical analysis. Journal of Chemical Physics, 1994, 100, 215-223.	3.0	25
103	The 3v3 band of CO2—influence of the pressurized perturber gas. Journal of Quantitative Spectroscopy and Radiative Transfer, 1994, 52, 361-366.	2.3	8
104	Absolute Intensities in CO2: 3ν3 near 1.4 μm. Journal of Molecular Spectroscopy, 1993, 159, 259-264.	1.2	13
105	Pressure induced shifts of CO2 lines: Measurements in the 0003–0000 band and theoretical analysis. Journal of Chemical Physics, 1992, 96, 4945-4953.	3.0	75
106	Lineâ€byâ€line measurements of interference parameters for the 0–1 and 0–2 bands of CO in He, and comparison with coupledâ€states calculations. Journal of Chemical Physics, 1992, 97, 4623-4632.	3.0	41
107	12C16O: Experimental determination of the linear coefficient of the Herman-Wallis factor. Journal of Molecular Spectroscopy, 1991, 148, 329-337.	1.2	1
108	Measurement of Line Interference Parameters for the CO-He System. Europhysics Letters, 1990, 12, 319-323.	2.0	11