

# Piotr Woźniak

## List of Publications by Year in descending order

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85  
papers

5,055  
citations

304743

22  
h-index

102487

66  
g-index

85  
all docs

85  
docs citations

85  
times ranked

4298  
citing authors

#	ARTICLE	IF	CITATIONS
1	Collisional line-shape effects in accurate He-perturbed H <sub>2</sub> spectra. Journal of Quantitative Spectroscopy and Radiative Transfer, 2022, 277, 107951.	2.3	8
2	The HITRAN2020 molecular spectroscopic database. Journal of Quantitative Spectroscopy and Radiative Transfer, 2022, 277, 107949.	2.3	770
3	Inhomogeneous broadening, narrowing and shift of molecular lines under frequent velocity-changing collisions. Journal of Quantitative Spectroscopy and Radiative Transfer, 2022, 287, 108246.	2.3	2
4	Relative intensities of hyperfine components of rovibrational transitions in molecular hydrogen. Physical Review A, 2022, 105, .	2.5	2
5	The first comprehensive dataset of beyond-voigt line-shape parameters from ab initio quantum scattering calculations for the HITRAN database: He-perturbed H <sub>2</sub> case study. Journal of Quantitative Spectroscopy and Radiative Transfer, 2021, 260, 107477.	2.3	21
6	Ab initio investigation of the CO <sup>+</sup> N <sub>2</sub> quantum scattering: The collisional perturbation of the pure rotational R(0) line in CO. Journal of Chemical Physics, 2021, 154, 054314.	3.0	8
7	Corrigendum to "Hyperfine structure of quadrupole rovibrational transitions in tritium-bearing hydrogen isotopologues" [J. Quant. Spectrosc. Radiat. Transf. 256 (2020), 107255]. Journal of Quantitative Spectroscopy and Radiative Transfer, 2021, 266, 107602.	2.3	0
8	Comb-calibrated Stimulated-Raman Spectroscopy of H <sub>2</sub> . , 2021, , .		0
9	Hyperfine structure of the $H_2$ $E \rightarrow F$ state in $H_2$ . Physical Review A, 2021, 103, 042701.	2.5	3
10	Hyperfine components of rovibrational dipole transitions in HT and DT. Journal of Quantitative Spectroscopy and Radiative Transfer, 2021, 270, 107662.	2.3	5
11	Hyperfine structure of rovibrational quadrupole transitions in HD. Journal of Quantitative Spectroscopy and Radiative Transfer, 2021, 272, 107753.	2.3	4
12	Corrigendum to "Hyperfine components of all rovibrational quadrupole transitions in the H <sub>2</sub> and D <sub>2</sub> molecules" [J. Quant. Spectrosc. Radiat. Transf. 253 (2020), 107186]. Journal of Quantitative Spectroscopy and Radiative Transfer, 2021, 271, 107750.	2.3	0
13	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
14	Fully quantum calculations of O <sub>2</sub> <sup>+</sup> N <sub>2</sub> scattering using a new potential energy surface: Collisional perturbations of the oxygen 118 ÅGHz fine structure line. Journal of Chemical Physics, 2021, 155, 124307.	3.0	13
15	Detection and manipulation of the transverse motion of neutral molecules in a Stark decelerator. Measurement: Journal of the International Measurement Confederation, 2021, 183, 109888.	5.0	1
16	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
17	Comb-referenced Stimulated Raman Spectrometer: Application to the Collisional Physics of H <sub>2</sub> . , 2021, , .		0
18	Frequency-based dispersion Lamb-dip spectroscopy in a high finesse optical cavity. Optics Express, 2021, 29, 39449.	3.4	7

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19	Engineering the sensitivity of macroscopic physical systems to variations in the fine-structure constant. <i>Europhysics Letters</i> , 2021, 136, 58001.	2.0	0
20	Evaluation of different parameterizations of temperature dependences of the line-shape parameters based on ab initio calculations: Case study for the HITRAN database. <i>Journal of Quantitative Spectroscopy and Radiative Transfer</i> , 2020, 240, 106676.	2.3	25
21	Fully quantum calculations of the line-shape parameters for the Hartmann-Tran profile: A CO-Ar case study. <i>Journal of Quantitative Spectroscopy and Radiative Transfer</i> , 2020, 243, 106803.	2.3	14
22	Analytical-function correction to the Hartmann-Tran profile for more reliable representation of the Dicke-narrowed molecular spectra. <i>Journal of Quantitative Spectroscopy and Radiative Transfer</i> , 2020, 242, 106784.	2.3	18
23	Subpercent agreement between <i>ab initio</i> and experimental collision-induced line shapes of carbon monoxide perturbed by argon. <i>Physical Review A</i> , 2020, 102, .	2.5	9
24	Ab initio calculations of collisional line-shape parameters and generalized spectroscopic cross-sections for rovibrational dipole lines in HD perturbed by He. <i>Journal of Quantitative Spectroscopy and Radiative Transfer</i> , 2020, 254, 107194.	2.3	8
25	Propagation of optically tunable coherent radiation in a gas of polar molecules. <i>Scientific Reports</i> , 2020, 10, 17615.	3.3	4
26	Hyperfine components of all rovibrational quadrupole transitions in the H <sub>2</sub> and D <sub>2</sub> molecules. <i>Journal of Quantitative Spectroscopy and Radiative Transfer</i> , 2020, 253, 107186.	2.3	13
27	Hyperfine structure of quadrupole rovibrational transitions in tritium-bearing hydrogen isotopologues. <i>Journal of Quantitative Spectroscopy and Radiative Transfer</i> , 2020, 256, 107255.	2.3	4
28	Accurate deuterium spectroscopy and comparison with <i>ab initio</i> calculations. <i>Physical Review A</i> , 2020, 101, .	2.5	6
29	H <sub>2</sub> -He collisions: Ab initio theory meets cavity-enhanced spectra. <i>Physical Review A</i> , 2020, 101, .	2.5	24
30	Ab initio quantum calculations of collisional effects in molecular spectra. <i>Journal of Physics: Conference Series</i> , 2020, 1412, 132040.	0.4	0
31	Positions and intensities of hyperfine components of all rovibrational dipole lines in the HD molecule. <i>Journal of Quantitative Spectroscopy and Radiative Transfer</i> , 2020, 253, 107171.	2.3	11
32	Line-shape parameters for the first rotational lines of HD in He. <i>Molecular Astrophysics</i> , 2020, 19, 100063.	1.6	16
33	Beyond the limits of conventional Stark deceleration. <i>Physical Review Research</i> , 2020, 2, .	3.6	4
34	Ultrahigh finesse cavity-enhanced spectroscopy for accurate tests of quantum electrodynamics for molecules. <i>Optics Letters</i> , 2020, 45, 1603.	3.3	26
35	Ab initio investigation of the line-shape parameters for atmosphere-relevant molecular systems. <i>Journal of Physics: Conference Series</i> , 2020, 1412, 132033.	0.4	0
36	Ab initio line-shape parameters for speed-dependent hard-collision profiles: applications to rovibrational lines of H <sub>2</sub> , D <sub>2</sub> , HD in He or H <sub>2</sub> . <i>Journal of Physics: Conference Series</i> , 2019, 1289, 012004.	0.4	0

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37	Line-shape parameters for pure rotational Raman lines of D <sub>2</sub> in He. Journal of Physics: Conference Series, 2019, 1289, 012026.	0.4	0
38	Stimulated Raman Spectroscopy of H <sub>2</sub> with Absolute Frequency Calibration. , 2019, , .		0
39	Nonlinear magneto-optical rotation with parametric resonance. Physical Review A, 2019, 100, .	2.5	4
40	Accurate wavenumber measurements for the <i>S</i> <sub>0</sub> (0), <i>S</i> <sub>0</sub> (1), and <i>S</i> <sub>0</sub> (2) pure rotational Raman lines of D <sub>2</sub> . Journal of Raman Spectroscopy, 2019, 50, 127-129.	2.5	15
41	High-accuracy and wide dynamic range frequency-based dispersion spectroscopy in an optical cavity. Optics Express, 2019, 27, 21810.	3.4	26
42	Precision Measurements and Test of Molecular Theory in Highly Excited Vibrational States of H <sub>2</sub> (v <sub>11</sub> ). , 2018, , 679-700.		0
43	New bounds on dark matter coupling from a global network of optical atomic clocks. Science Advances, 2018, 4, eaau4869.	10.3	96
44	Testing the ab initio quantum scattering calculations for the D <sub>2</sub> -He benchmark system with stimulated Raman spectroscopy. Journal of Raman Spectroscopy, 2018, 49, 1339-1349.	2.5	28
45	Analysis of optical atomic clocks readouts aimed on searches for dark-matter signatures. , 2018, , .		0
46	Accurate deuterium spectroscopy for fundamental studies. Journal of Quantitative Spectroscopy and Radiative Transfer, 2018, 213, 41-51.	2.3	54
47	Ab initio line-shape calculations for the S and O branches of H <sub>2</sub> perturbed by He. Journal of Quantitative Spectroscopy and Radiative Transfer, 2018, 219, 313-322.	2.3	20
48	Multispectrum-fitting of phenomenological collisional line-shape models to a speed-dependent Blackmore profile for spectroscopic analysis and databases. Journal of Physics: Conference Series, 2017, 810, 012061.	0.4	2
49	Ultra accurate measurements and ab initio calculations of collisional effects in pure D <sub>2</sub> . Journal of Physics: Conference Series, 2017, 810, 012042.	0.4	1
50	Experimental constraint on dark matter detection with optical atomic clocks. Nature Astronomy, 2017, 1, .	10.1	84
51	Rovibrational line-shape parameters for H <sub>2</sub> in He and new H <sub>2</sub> -He potential energy surface. Journal of Quantitative Spectroscopy and Radiative Transfer, 2017, 202, 308-320.	2.3	42
52	The HITRAN2016 molecular spectroscopic database. Journal of Quantitative Spectroscopy and Radiative Transfer, 2017, 203, 3-69.	2.3	2,840
53	Experimental constraint on dark matter-standard model coupling with optical atomic clocks. , 2017, , .		0
54	The problem of numerical precision in spectral line shapes calculations. Journal of Physics: Conference Series, 2017, 810, 012043.	0.4	0

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55	Dispersion and relativistic corrections to the spectral line-shape models. Journal of Physics: Conference Series, 2017, 810, 012062.	0.4	1
56	Spectral line-shape study by cavity-enhanced complex refractive index spectroscopy. Journal of Physics: Conference Series, 2017, 810, 012007.	0.4	3
57	Absolute molecular transition frequencies measured by three cavity-enhanced spectroscopy techniques. Journal of Chemical Physics, 2016, 144, 214202.	3.0	37
58	The implementation of non-Voigt line profiles in the HITRAN database: H2 case study. Journal of Quantitative Spectroscopy and Radiative Transfer, 2016, 177, 75-91.	2.3	64
59	A test of H2-He potential energy surfaces. European Physical Journal D, 2016, 70, 1.	1.3	24
60	Collision-induced line-shape effects limiting the accuracy in Doppler-limited spectroscopy of $H_2$ . Physical Review A, 2016, 93, .	2.5	22
61	Dispersion corrections to the Gaussian profile describing the Doppler broadening of spectral lines. Physical Review A, 2016, 93, .	2.5	5
62	Precision measurements and test of molecular theory in highly excited vibrational states of H2 ( $v=11$ ). Applied Physics B: Lasers and Optics, 2016, 122, 294.	2.2	17
63	One-dimensional cavity mode-dispersion spectroscopy for validation of CRDS technique. Measurement Science and Technology, 2016, 27, 045501.	2.6	21
64	HITRAN Application Programming Interface (HAPI): A comprehensive approach to working with spectroscopic data. Journal of Quantitative Spectroscopy and Radiative Transfer, 2016, 177, 15-30.	2.3	253
65	Strong competition between velocity-changing and phase- or state-changing collisions in $H_2$ spectra perturbed by Ar. Physical Review A, 2015, 91, .	2.5	27
66	CRDS investigation of line shapes of the nitrogen-broadened oxygen $B^2\Sigma^-$ -band transition. Journal of Physics: Conference Series, 2015, 635, 092109.	0.4	0
67	Relativistic formulation of the Voigt profile. Physical Review A, 2015, 91, .	2.5	10
68	Speed-dependent effects and Dicke narrowing in nitrogen-broadened oxygen. Journal of Quantitative Spectroscopy and Radiative Transfer, 2015, 165, 68-75.	2.3	15
69	One-dimensional frequency-based spectroscopy. Optics Express, 2015, 23, 14472.	3.4	42
70	Strontium optical lattice clocks for practical realization of the metre and secondary representation of the second. Measurement Science and Technology, 2015, 26, 075201.	2.6	26
71	Two independent strontium optical lattice clocks for practical realization of the meter and secondary representation of the second. , 2015, , .		0
72	Quadratic speed dependence of collisional broadening and shifting for atmospheric applications. Journal of Quantitative Spectroscopy and Radiative Transfer, 2015, 151, 43-48.	2.3	32

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73	Line shape measurements of rubidium 5S-7S two-photon transition. Journal of Physics: Conference Series, 2014, 548, 012023.	0.4	2
74	Velocity-changing collisions in pure H <sub>2</sub> and H <sub>2</sub> -Ar mixture. Journal of Chemical Physics, 2014, 141, 074301.	3.0	30
75	Line-shapes analysis with ultra-high accuracy. Journal of Physics: Conference Series, 2014, 548, 012022.	0.4	0
76	Alternative approaches to cavity enhanced absorption spectroscopy. Journal of Physics: Conference Series, 2014, 548, 012024.	0.4	2
77	Precise cavity enhanced absorption spectroscopy. Journal of Physics: Conference Series, 2014, 548, 012015.	0.4	5
78	Spectral line-shapes of oxygen B-band transitions measured with cavity ring-down spectroscopy. Journal of Physics: Conference Series, 2014, 548, 012028.	0.4	3
79	Influence of the interaction potential shape on the Dicke narrowed spectral line profiles affected by speed-dependent collisional broadening and shifting. Journal of Quantitative Spectroscopy and Radiative Transfer, 2013, 120, 36-43.	2.3	20
80	Absolute frequency measurement of rubidium 5S-7S two-photon transitions. Optics Letters, 2013, 38, 4581.	3.3	21
81	Iterative approach to line-shape calculations based on the transport-relaxation equation. Physical Review A, 2013, 88, .	2.5	28
82	Testing optical clock calibration procedures: Absolute frequency measurement of rubidium 5S-7S two-photon transitions. , 2013, , .		0
83	The Global Network of Optical Magnetometers for Exotic physics (GNOME): A novel scheme to search for physics beyond the Standard Model. Annalen Der Physik, 2013, 525, 659-670.	2.4	89
84	Project of photoassociative measurements for determination of the density shift of the $1S \rightarrow 3P$ clock transition in neutral strontium. , 2013, , .		0
85	Dicke Narrowing Effect for $\nu$ -type Collisional Potential. Journal of Physics: Conference Series, 2012, 397, 012008.	0.4	1