Andrey A Vigasin

List of Publications by Year
in descending order

68	1,342	361413 20	361022 35
papers	citations	h-index	g-index

68	68	68	1180
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Transient reducing greenhouse warming on early Mars. Geophysical Research Letters, 2017, 44, 665-671.	4.0	178
2	Update of the HITRAN collision-induced absorption section. Icarus, 2019, 328, 160-175.	2.5	105
3	Water vapour self-continuum and water dimers: 1. Analysis of recent work. Journal of Quantitative Spectroscopy and Radiative Transfer, 2011, 112, 1286-1303.	2.3	93
4	Bound, metastable and free states of bimolecular complexes. Infrared Physics, 1991, 32, 461-470.	0.5	63
5	Matrix isolation spectra of the carbon dioxide monomer and dimer revisited. Vibrational Spectroscopy, 2000, 23, 83-94.	2.2	58
6	Explicit correlation treatment of the potential energy surface of CO2 dimer. Journal of Chemical Physics, 2014, 140, 234310.	3.0	53
7	Direct absorption spectroscopy of water clusters formed in a continuous slit nozzle expansion. Journal of Chemical Physics, 2009, 131, 204312.	3.0	52
8	Water vapor continuous absorption in various mixtures: possible role of weakly bound complexes. Journal of Quantitative Spectroscopy and Radiative Transfer, 2000, 64, 25-40.	2.3	50
9	Vibrational frequency shifts caused by weak intermolecular interactions. Chemical Physics Letters, 1997, 269, 235-243.	2.6	46
10	On the spectroscopic manifestations of weakly bound complexes in rarefied gases. Chemical Physics Letters, 1985, 117, 85-88.	2.6	33
11	Vibrational frequency shifts and thermodynamic stabilities of (HF)n isomers (n=4â€“8). Chemical Physics Letters, 1995, 245, 319-325.	2.6	32
12	Four-photon coherent spectroscopy of orientational motion of H2O molecules in liquid water. Journal of Raman Spectroscopy, 2005, 36, 145-147.	2.5	29
13	H ₂ Oâ€N ₂ collision-induced absorption band intensity in the region of the N ₂ fundamental: ab initio investigation of its temperature dependence and comparison with laboratory data. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2012, 370, 2691-2709.	3.4	28
14	On the possibility to quantify contributions from true bound and metastable pairs to infrared absorption in pressurised water vapour. Molecular Physics, 2010, 108, 2309-2313.	1.7	27
15	Temperature Variations of the Interaction Induced Absorption of CO2 in the Î½1, 2Î½2 Region: FTIR Measurements and Dimer Contribution. Journal of Molecular Spectroscopy, 2002, 213, 51-56.	1.2	24
16	Contribution of bound, metastable and free states of bimolecular complexes to collision-induced intensity of absorption. Chemical Physics Letters, 1994, 225, 537-541.	2.6	23
17	On the nature of collision-induced absorption in gaseous homonuclear diatomics. Journal of Quantitative Spectroscopy and Radiative Transfer, 1996, 56, 409-422.	2.3	23
18	Intensity and Bandshapes of Collision-Induced Absorption by CO2 in the Region of the Fermi Doublet. Journal of Molecular Spectroscopy, 2000, 200, 89-95.	1.2	22

#	Article	IF	Citations
19	Subdivision of phase space for anisotropically interacting water molecules. Molecular Physics, 1997, 90, 101-106.	1.7	21
20	Statistical physics partitioning and classical trajectory analysis of the phase space in CO2â€“Ar weakly interacting pairs. Journal of Molecular Structure, 2005, 742, 31-36.	3.6	21
21	Direct FTIR high resolution probe of small and medium size Arn(CO2)m van der Waals complexes formed in a slit supersonic expansion. Journal of Molecular Spectroscopy, 2006, 240, 141-152.	1.2	20
22	Collision-Induced Absorption in the Region of the O2 Fundamental: Bandshapes and Dimeric Features. Journal of Molecular Spectroscopy, 2000, 202, 59-66.	1.2	18
23	Water vapor continuum: Whether collision-induced absorption is involved?. Journal of Quantitative Spectroscopy and Radiative Transfer, 2014, 148, 58-64.	2.3	18
24	Classical calculation of the equilibrium constants for true bound dimers using complete potential energy surface. Journal of Chemical Physics, 2015, 143, 234304.	3.0	18
25	Nuclear Spin Symmetry Conservation in ¹H₂¹⁶O Investigated by Direct Absorption FTIR Spectroscopy of Water Vapor Cooled Down in Supersonic Expansion. Journal of Physical Chemistry A, 2017, 121, 7455-7468.	2.5	18
26	Spectral composition of the water vapour self-continuum absorption within 2.7 and 6.25ÂÂμm bands. Journal of Quantitative Spectroscopy and Radiative Transfer, 2019, 228, 97-105.	2.3	18
27	On the water dimer contribution to the OH stretching absorption band profile in pressurized water vapour. Molecular Physics, 2008, 106, 1155-1159.	1.7	16
28	Simulation of collision-induced absorption spectra based on classical trajectories and ab initio potential and induced dipole surfaces. I. Case study of N2â€“N2 rototranslational band. Journal of Chemical Physics, 2019, 151, 194106.	3.0	16
29	On the temperature variations of the integrated absorption intensity in the oxygen fundamental. Journal of Molecular Spectroscopy, 2004, 224, 185-187.	1.2	15
30	Identification of the (CO2)2 Dimer Vibrations in the Î½1, 2Î½2 Region: Anharmonic Variational Calculations. Journal of Molecular Spectroscopy, 2001, 209, 81-87.	1.2	14
31	Density evolution of absorption bandshapes in the water vapor OH-stretching fundamental and overtone: evidence for molecular aggregation. Journal of Molecular Structure, 2005, 742, 173-181.	3.6	14
32	On the origin of the band structure observed in the collision-induced absorption bands of CO2. Journal of Molecular Spectroscopy, 2003, 218, 260-261.	1.2	12
33	On the influence of van der waals association on IR absorption band shapes of highly compressed carbon dioxide. Infrared Physics, 1989, 29, 575-582.	0.5	11
34	Thermally averaged effective dissociation energy of dimers. Chemical Physics Letters, 1995, 242, 33-38.	2.6	11
35	Ab initio 3D potential energy and dipole moment surfaces for the CH4â€“Ar complex: Collision-induced intensity and dimer content. Journal of Chemical Physics, 2016, 144, 054304.	3.0	10
36	IR-spectra of (CO2)2 dimers and collision-induced absorption of carbon dioxide in the region of the fermi doublet (Î½1, 2Î½2). Journal of Quantitative Spectroscopy and Radiative Transfer, 1993, 50, 695-703.	2.3	9

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37	Mass-action law for highly excited dimers. Chemical Physics Letters, 1998, 290, 495-501.	2.6	8
38	Ab initio and multipolar characterisation of the induced dipole surface for CH4â€“CH4: Application to dipole-forbidden absorption in the Titanâ€™s atmosphere. Journal of Molecular Spectroscopy, 2013, 291, 102-107.	1.2	8
39	Far-infrared collision-induced absorption in rare gas mixtures: Quantum and semi-classical calculations. Journal of Chemical Physics, 2014, 140, .	3.0	8
40	Spin-selective adsorption of water vapor. Doklady Physics, 2002, 47, 842-845.	0.7	7
41	Systematic trends in the vibrational frequency shifts of some molecules trapped in amorphous water ice. Journal of Molecular Structure, 2003, 658, 101-113.	3.6	7
42	Extensiveab initiostudy of the integrated IR intensity in the N₂fundamental collision-induced band. Molecular Physics, 2008, 106, 1227-1231.	1.7	7
43	The nature of the absorption bandshape density evolution for the first overtone of CO compressed by N2. Infrared Physics, 1993, 34, 289-298.	0.5	6
44	Simultaneous infrared absorption in a mixture of CO2 and H2O: The role of hydrogen-bonded aggregates. Journal of Quantitative Spectroscopy and Radiative Transfer, 1994, 52, 295-301.	2.3	6
45	High-resolution CARS spectroscopy of small carbon dioxide clusters: investigation of the CO2 dimer in the Fermi dyad. Journal of Molecular Structure, 1997, 410-411, 47-50.	3.6	6
46	Simulation of collision-induced absorption spectra based on classical trajectories and ab initio potential and induced dipole surfaces. II. CO2â€“Ar rototranslational band including true dimer contribution. Journal of Chemical Physics, 2021, 155, 064301.	3.0	6
47	Thermally Averaged Spectroscopic Parameters of the Weakly Bound Dimers. Journal of Molecular Spectroscopy, 2001, 205, 9-15.	1.2	5
48	Breakdown of conventional rovibrational selection rules for field- or collision-induced absorption in symmetric linear molecules. Physical Review A, 2020, 102, .	2.5	5
49	Spatial distribution of CO2 dimers in axisymmetric gas jets expanding in a vacuum. Journal of Applied Mechanics and Technical Physics, 1989, 30, 52-57.	0.5	4
50	CCSD(T) potential energy and induced dipole surfaces for N2â€“H2(D2): Retrieval of the collision-induced absorption integrated intensities in the regions of the fundamental and first overtone vibrational transitions. Journal of Chemical Physics, 2012, 137, 114308.	3.0	4
51	Greenhouse effect in planetary atmospheres caused by molecular symmetry breaking in intermolecular interactions. Izvestiya - Atmospheric and Oceanic Physics, 2017, 53, 164-173.	0.9	4
52	Trajectory-based Simulation of Far-infrared Collision-induced Absorption Profiles of CH₄â€“N₂ for Modeling Titanâ€™s Atmosphere. Astrophysical Journal, Supplement Series, 2022, 258, 33.	7.7	4
53	Herman-Wallis factor for a molecule of type HCN. Journal of Quantitative Spectroscopy and Radiative Transfer, 2022, 288, 108274.	2.3	4
54	Structure and molecular spectroscopy of gas-phase complexes. Journal of Structural Chemistry, 1988, 28, 735-764.	1.0	3

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55	Comprehensive classical analysis of partition function and some observables for weakly interacting polyatomic dimers. Journal of Chemical Physics, 2018, 149, 194304.	3.0	3
56	Theory of rovibrational line intensities in allowed and collision-induced absorption spectra of linear molecules. Physical Review A, 2021, 104, .	2.5	3
57	Systematization of published research graphics characterizing weakly bound molecular complexes with carbon dioxide. , 2017, , .		3
58	Kinetics of dimer formation in rarefied water vapor streams. Journal of Applied Mechanics and Technical Physics, 1981, 22, 66-71.	0.5	2
59	Structure and properties of associates of water. Journal of Structural Chemistry, 1983, 24, 102-131.	1.0	2
60	ON THE MODELLING OF ABSORPTION IN THE Î½3 BAND FAR WING OF CO2 PERTURBED BY ARGON. Journal of Quantitative Spectroscopy and Radiative Transfer, 1999, 61, 743-749.	2.3	2
61	On the concept of excluded volume for weakly associating gas. Molecular Physics, 2012, 110, 2957-2961.	1.7	2
62	Diffraction of light by absorbing inclusions in solids. Soviet Journal of Quantum Electronics, 1977, 7, 370-372.	0.1	1
63	Application of spontaneous Raman spectroscopy to the study of molecular association in a freely expanding gas jet. Journal of Applied Spectroscopy, 1991, 55, 777-780.	0.7	1
64	The effect of perturbing gas density on the intensity distribution in rovibrational absorption bands. Chemical Physics, 2006, 325, 404-410.	1.9	1
65	Systematization of published research plots in spectroscopy of weakly bounded complexes of molecular oxygen and nitrogen. , 2018, , .		1
66	Thermal stresses in laser materials containing inclusions. Soviet Journal of Quantum Electronics, 1976, 6, 522-524.	0.1	0
67	<title>Partially deuterated water dimer: are there perspectives for its spectroscopic detection in the atmosphere?</title>. , 2006, 6580, 246.		0
68	<title>Ab initio simulation of collision-induced intensity in the N<formula><inf><roman>2</roman></inf></formula> fundamental</title>. , 2006, 6580, 90.		0