# 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 | Trajectory-based Simulation of Far-infrared Collision-induced Absorption Profiles of CH<sub>4</sub>â€“N<sub>2</sub> for Modeling Titanâ€™s Atmosphere. Astrophysical Journal, Supplement Series, 2022, 258, 33. | 7.7 | 4 |
| 2 | Herman-Wallis factor for a molecule of type HCN. Journal of Quantitative Spectroscopy and Radiative Transfer, 2022, 288, 108274. | 2.3 | 4 |
| 3 | 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 |
| 4 | Theory of rovibrational line intensities in allowed and collision-induced absorption spectra of linear molecules. Physical Review A, 2021, 104, . | 2.5 | 3 |
| 5 | Breakdown of conventional rovibrational selection rules for field- or collision-induced absorption in symmetric linear molecules. Physical Review A, 2020, 102, . | 2.5 | 5 |
| 6 | 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 |
| 7 | Update of the HITRAN collision-induced absorption section. Icarus, 2019, 328, 160-175. | 2.5 | 105 |
| 8 | 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 |
| 9 | Comprehensive classical analysis of partition function and some observables for weakly interacting polyatomic dimers. Journal of Chemical Physics, 2018, 149, 194304. | 3.0 | 3 |
| 10 | Systematization of published research plots in spectroscopy of weakly bounded complexes of molecular oxygen and nitrogen. , 2018, , . | | 1 |
| 11 | Transient reducing greenhouse warming on early Mars. Geophysical Research Letters, 2017, 44, 665-671. | 4.0 | 178 |
| 12 | Nuclear Spin Symmetry Conservation in <sup>1</sup>H<sub>2</sub><sup>16</sup>O 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 |
| 13 | 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 |
| 14 | Systematization of published research graphics characterizing weakly bound molecular complexes with carbon dioxide. , 2017, , . | | 3 |
| 15 | 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 |
| 16 | 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 |
| 17 | Explicit correlation treatment of the potential energy surface of CO2 dimer. Journal of Chemical Physics, 2014, 140, 234310. | 3.0 | 53 |
| 18 | Far-infrared collision-induced absorption in rare gas mixtures: Quantum and semi-classical calculations. Journal of Chemical Physics, 2014, 140, . | 3.0 | 8 |

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| 19 | Water vapor continuum: Whether collision-induced absorption is involved?. Journal of Quantitative Spectroscopy and Radiative Transfer, 2014, 148, 58-64. | 2.3 | 18 |
| 20 | 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 |
| 21 | On the concept of excluded volume for weakly associating gas. Molecular Physics, 2012, 110, 2957-2961. | 1.7 | 2 |
| 22 | 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 |
| 23 | H <sub>2</sub> Oâ€“N <sub>2</sub> collision-induced absorption band intensity in the region of the N <sub>2</sub> 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 |
| 24 | 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 |
| 25 | 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 |
| 26 | Direct absorption spectroscopy of water clusters formed in a continuous slit nozzle expansion. Journal of Chemical Physics, 2009, 131, 204312. | 3.0 | 52 |
| 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 | Extensiveab initiostudy of the integrated IR intensity in the N<sub>2</sub>fundamental collision-induced band. Molecular Physics, 2008, 106, 1227-1231. | 1.7 | 7 |
| 29 | 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 |
| 30 | The effect of perturbing gas density on the intensity distribution in rovibrational absorption bands. Chemical Physics, 2006, 325, 404-410. | 1.9 | 1 |
| 31 | <title>Partially deuterated water dimer: are there perspectives for its spectroscopic detection in the atmosphere?</title>. , 2006, 6580, 246. | | 0 |
| 32 | <title>Ab initio simulation of collision-induced intensity in the N<formula><inf><roman>2</roman></inf></formula> fundamental</title>. , 2006, 6580, 90. | | 0 |
| 33 | 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 |
| 34 | 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 |
| 35 | Four-photon coherent spectroscopy of orientational motion of H2O molecules in liquid water. Journal of Raman Spectroscopy, 2005, 36, 145-147. | 2.5 | 29 |
| 36 | On the temperature variations of the integrated absorption intensity in the oxygen fundamental. Journal of Molecular Spectroscopy, 2004, 224, 185-187. | 1.2 | 15 |

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| 37 | 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 |
| 38 | 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 |
| 39 | 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 |
| 40 | Spin-selective adsorption of water vapor. Doklady Physics, 2002, 47, 842-845. | 0.7 | 7 |
| 41 | Thermally Averaged Spectroscopic Parameters of the Weakly Bound Dimers. Journal of Molecular Spectroscopy, 2001, 205, 9-15. | 1.2 | 5 |
| 42 | 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 |
| 43 | 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 |
| 44 | 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 |
| 45 | 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 |
| 46 | Matrix isolation spectra of the carbon dioxide monomer and dimer revisited. Vibrational Spectroscopy, 2000, 23, 83-94. | 2.2 | 58 |
| 47 | 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 |
| 48 | Mass-action law for highly excited dimers. Chemical Physics Letters, 1998, 290, 495-501. | 2.6 | 8 |
| 49 | Subdivision of phase space for anisotropically interacting water molecules. Molecular Physics, 1997, 90, 101-106. | 1.7 | 21 |
| 50 | 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 |
| 51 | Vibrational frequency shifts caused by weak intermolecular interactions. Chemical Physics Letters, 1997, 269, 235-243. | 2.6 | 46 |
| 52 | 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 |
| 53 | Thermally averaged effective dissociation energy of dimers. Chemical Physics Letters, 1995, 242, 33-38. | 2.6 | 11 |
| 54 | Vibrational frequency shifts and thermodynamic stabilities of (HF)n isomers (n=4â€“8). Chemical Physics Letters, 1995, 245, 319-325. | 2.6 | 32 |

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| 55 | 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 |
| 56 | 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 |
| 57 | 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 |
| 58 | 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 |
| 59 | Bound, metastable and free states of bimolecular complexes. Infrared Physics, 1991, 32, 461-470. | 0.5 | 63 |
| 60 | 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 |
| 61 | 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 |
| 62 | 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 |
| 63 | Structure and molecular spectroscopy of gas-phase complexes. Journal of Structural Chemistry, 1988, 28, 735-764. | 1.0 | 3 |
| 64 | On the spectroscopic manifestations of weakly bound complexes in rarefied gases. Chemical Physics Letters, 1985, 117, 85-88. | 2.6 | 33 |
| 65 | Structure and properties of associates of water. Journal of Structural Chemistry, 1983, 24, 102-131. | 1.0 | 2 |
| 66 | Kinetics of dimer formation in rarefied water vapor streams. Journal of Applied Mechanics and Technical Physics, 1981, 22, 66-71. | 0.5 | 2 |
| 67 | Diffraction of light by absorbing inclusions in solids. Soviet Journal of Quantum Electronics, 1977, 7, 370-372. | 0.1 | 1 |
| 68 | Thermal stresses in laser materials containing inclusions. Soviet Journal of Quantum Electronics, 1976, 6, 522-524. | 0.1 | 0 |