

Xavier Michaut

List of Publications by Year in descending order

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52
papers

1,549
citations

257450

24
h-index

302126

39
g-index

52
all docs

52
docs citations

52
times ranked

1180
citing authors

#	ARTICLE	IF	CITATIONS
1	CO ICE PHOTODESORPTION: A WAVELENGTH-DEPENDENT STUDY. <i>Astrophysical Journal Letters</i> , 2011, 739, L36.	8.3	138
2	UV PHOTODESORPTION OF METHANOL IN PURE AND CO-RICH ICES: DESORPTION RATES OF THE INTACT MOLECULE AND OF THE PHOTOFRAGMENTS. <i>Astrophysical Journal Letters</i> , 2016, 817, L12.	8.3	128
3	An experimental investigation of the nonlinear refractive index (n_2) of carbon disulfide and toluene by spectral shearing interferometry and z-scan techniques. <i>Chemical Physics Letters</i> , 2003, 369, 318-324.	2.6	124
4	Temperature and time effects on the rovibrational structure of fundamentals of H ₂ O trapped in solid argon: hindered rotation and RTC satellite. <i>Vibrational Spectroscopy</i> , 2004, 34, 83-93.	2.2	79
5	INDIRECT ULTRAVIOLET PHOTODESORPTION FROM CO:N ₂ BINARY ICES – AN EFFICIENT GRAIN-GAS PROCESS. <i>Astrophysical Journal</i> , 2013, 779, 120.	4.5	77
6	Wavelength-dependent UV photodesorption of pure N ₂ and O ₂ ices. <i>Astronomy and Astrophysics</i> , 2013, 556, A122.	5.1	75
7	UV photodesorption of interstellar CO ice analogues: from subsurface excitation to surface desorption. <i>Physical Chemistry Chemical Physics</i> , 2012, 14, 9929.	2.8	74
8	Collisional broadening and shifting parameters of the Raman Q branch of H ₂ perturbed by N ₂ determined from speed-dependent line profiles at high temperatures. <i>Physical Review A</i> , 1996, 54, 402-409.	2.5	51
9	Wavelength resolved UV photodesorption and photochemistry of CO ₂ ice. <i>Faraday Discussions</i> , 2014, 168, 533.	3.2	50
10	Differential adsorption of complex organic molecules isomers at interstellar ice surfaces. <i>Astronomy and Astrophysics</i> , 2011, 532, A12.	5.1	49
11	Collisional effects on spectral line shape from the Doppler to the collisional regime: A rigorous test of a unified model. <i>Journal of Chemical Physics</i> , 2000, 112, 158-166.	3.0	45
12	Nuclear spin conversion of molecular hydrogen on amorphous solid water in the presence of O ₂ traces. <i>Physical Chemistry Chemical Physics</i> , 2011, 13, 2172-2178.	2.8	40
13	X-ray photodesorption from water ice in protoplanetary disks and X-ray-dominated regions. <i>Nature Astronomy</i> , 2018, 2, 796-801.	10.1	38
14	Transient and instantaneous third-order nonlinear optical response of C ₆₀ and the higher fullerenes C ₇₀ , C ₇₆ and C ₈₄ . <i>Journal of Physics B: Atomic, Molecular and Optical Physics</i> , 2001, 34, 4983-4996.	1.5	37
15	Nuclear spin conversion of water diluted in solid argon at 4.2K: Environment and atmospheric impurities effects. <i>Chemical Physics Letters</i> , 2007, 447, 232-235.	2.6	35
16	Spectrally-resolved UV photodesorption of CH ₄ in pure and layered ices. <i>Astronomy and Astrophysics</i> , 2017, 603, A61.	5.1	35
17	Adsorption energies and prefactor determination for CH ₃ OH adsorption on graphite. <i>Journal of Chemical Physics</i> , 2015, 143, 084703.	3.0	34
18	Experimental and theoretical study of line mixing in methane spectra. III. The Q branch of the Raman $\hat{1}/2_1$ band. <i>Journal of Chemical Physics</i> , 2000, 112, 1335-1343.	3.0	31

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19	Nuclear spin conversion of H ₂ O trapped in solid xenon at 4.2K: A new assignment of $\hat{1}/2$ rovibrational lines. <i>Chemical Physics Letters</i> , 2009, 480, 82-85.	2.6	29
20	Investigations of pure rotational transitions of H ₂ self-perturbed and perturbed by He. I. Measurement, modeling, and quantum calculations. <i>Journal of Chemical Physics</i> , 1998, 109, 951-961.	3.0	25
21	Hydrogen CARS thermometry in H ₂ -N ₂ mixtures at high pressure and medium temperatures: influence of linewidths models. <i>Applied Physics B: Lasers and Optics</i> , 2000, 70, 447-454.	2.2	25
22	Adsorption of Organic Isomers on Water Ice Surfaces: A Study of Acetic Acid and Methyl Formate. <i>Journal of Physical Chemistry C</i> , 2011, 115, 12920-12928.	3.1	25
23	Nitrile versus isonitrile adsorption at interstellar grains surfaces. <i>Astronomy and Astrophysics</i> , 2017, 598, A18.	5.1	25
24	Observation of nuclear spin species conversion inside the 1593cm ⁻¹ structure of H ₂ O trapped in argon matrices: Nitrogen impurities and the H ₂ O:N ₂ complex. <i>Journal of Molecular Structure</i> , 2008, 873, 181-190.	3.6	24
25	Recent progress in spectroscopy of ammonia in the infrared.  1.5 \times 10^4 range using evolution of spectra from 300 K down to 122 K. <i>Journal of Quantitative Spectroscopy and Radiative Transfer</i> , 2012, 113, 1084-1091.	2.3	22
26	Confinement Effects on the Nuclear Spin Isomer Conversion of H ₂ O. <i>Journal of Physical Chemistry A</i> , 2017, 121, 1571-1576.	2.5	21
27	Self-focusing in Terbium Gallium Garnet using Z-scan. <i>Optics Communications</i> , 1998, 153, 301-304.	2.1	18
28	Time evolution of the $\hat{1}/2$ IR absorption of (o-H ₂) _n :H ₂ O clusters (n=11-1), and increase of H ₂ O rotation, in O ₂ doped solid hydrogen at 4.2K. <i>Chemical Physics Letters</i> , 2008, 454, 61-64.	2.6	18
29	Nuclear Spin Symmetry Conservation in ¹ H ₂ ¹⁶ O Investigated by Direct Absorption FTIR Spectroscopy of Water Vapor Cooled Down in Supersonic Expansion. <i>Journal of Physical Chemistry A</i> , 2017, 121, 7455-7468.	2.5	18
30	The vibration-rotation of H ₂ O and its complexation with CO ₂ in solid argon revisited. <i>Low Temperature Physics</i> , 2003, 29, 852-857.	0.6	17
31	The water line emission and ortho-to-para ratio in the Orion Bar photon-dominated region. <i>Astronomy and Astrophysics</i> , 2019, 632, A8.	5.1	15
32	Understanding the relationship between gas and ice : experimental investigations on ortho-para ratios. <i>EAS Publications Series</i> , 2012, 58, 307-314.	0.3	12
33	Complex organic molecules in protoplanetary disks: X-ray photodesorption from methanol-containing ices. <i>Astronomy and Astrophysics</i> , 2021, 647, A35.	5.1	11
34	Vacuum Ultraviolet Photodesorption and Photofragmentation of Formaldehyde-Containing Ices. <i>ACS Earth and Space Chemistry</i> , 2019, 3, 1135-1150.	2.7	10
35	Photodesorption of Acetonitrile CH ₃ CN in UV-irradiated Regions of the Interstellar Medium: Experimental Evidence. <i>Astrophysical Journal</i> , 2021, 922, 213.	4.5	10
36	Mechanism of Indirect Photon-Induced Desorption at the Water Ice Surface. <i>Physical Review Letters</i> , 2021, 126, 156001.	7.8	9

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37	The efficient photodesorption of nitric oxide (NO) ices. <i>Astronomy and Astrophysics</i> , 2017, 606, L9.	5.1	8
38	Complex organic molecules in protoplanetary disks: X-ray photodesorption from methanol-containing ices. <i>Astronomy and Astrophysics</i> , 2021, 647, A36.	5.1	8
39	Nitrile versus isonitrile adsorption at interstellar grain surfaces. <i>Astronomy and Astrophysics</i> , 2017, 608, A50.	5.1	7
40	Desorption of neutrals, cations, and anions from core-excited amorphous solid water. <i>Journal of Chemical Physics</i> , 2020, 152, 054711.	3.0	7
41	Optical diagnostic of temperature in rocket engines by coherent Raman techniques. <i>Comptes Rendus Physique</i> , 2004, 5, 249-258.	0.9	6
42	Vacuum-UV Photodesorption from Compact Amorphous Solid Water: Photon Energy Dependence, Isotopic and Temperature Effects. <i>ACS Earth and Space Chemistry</i> , 2022, 6, 100-115.	2.7	6
43	Investigations of pure rotational transitions of H ₂ perturbed by He. II. High-temperature calculations and extrapolations. <i>Journal of Chemical Physics</i> , 2001, 114, 1286-1294.	3.0	5
44	Observation of methane nuclear spin isomers in gas phase at low temperature. <i>Journal of Molecular Spectroscopy</i> , 2012, 279, 37-43.	1.2	5
45	H ₂ vibrational spectral signatures in binary and ternary mixtures: theoretical model, simulation and application to CARS thermometry in high pressure flames. <i>Comptes Rendus Physique</i> , 2001, 2, 989-1000.	0.1	4
46	X-Ray induced desorption and photochemistry in CO ice. <i>Physical Chemistry Chemical Physics</i> , 2021, 23, 15965-15979.	2.8	4
47	Ro-translational dynamics of confined water: II - Spectroscopic evidence of confinement effects on the far-infrared spectra of water isotopologues in argon and krypton matrices.. <i>Journal of Chemical Physics</i> , 2022, 156, 074305.	3.0	4
48	Ro-translational dynamics of confined water: I - The confined asymmetric rotor model. <i>Journal of Chemical Physics</i> , 2022, 156, 074304.	3.0	4
49	FITTING LAW FOR THE DENSITY SHIFT OF Q(J) TRANSITIONS OF H ₂ IN H ₂ â€“X (X: H ₂ , He, N ₂) MIXTURES. <i>Journal of Quantitative Spectroscopy and Radiative Transfer</i> , 1998, 60, 585-591.	2.3	3
50	XUV photodesorption of carbon cluster ions and ionic photofragments from a mixed methaneâ€“water ice. <i>Physical Chemistry Chemical Physics</i> , 2018, 20, 7457-7469.	2.8	3
51	Spectroscopic Measurements of Methane Solidâ€“Gas Equilibrium Clapeyron Curve between 40 and 77 K. <i>Journal of Physical Chemistry A</i> , 2019, 123, 3518-3534.	2.5	1
52	Differential adsorption of complex organic molecule isomers on interstellar ice surfaces. <i>EAS Publications Series</i> , 2012, 58, 349-352.	0.3	0