Lukas Emmenegger

List of Publications by Year
in descending order

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120	3,799	117571	143943
papers	citations	34 h-index	57 g-index

172	172	172	4247
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Quantum cascade laser absorption spectrometer with a low temperature multipass cell for precision clumped CO₂ measurement. Optics Express, 2022, 30, 4631.	1.7	4
2	Frequency axis for swept dual-comb spectroscopy with quantum cascade lasers. Optics Letters, 2022, 47, 625.	1.7	7
3	Absolute frequency referencing in the long wave infrared using a quantum cascade laser frequency comb. Optics Express, 2022, 30, 12891.	1.7	11
4	Swiss halocarbon emissions for 2019 to 2020 assessed from regional atmospheric observations. Atmospheric Chemistry and Physics, 2022, 22, 2447-2466.	1.9	11
5	High-resolution spectroscopy with quantum cascade laser frequency combs. , 2022, , .		0
6	Controlled-release experiment to investigate uncertainties in UAV-based emission quantification for methane point sources. Atmospheric Measurement Techniques, 2022, 15, 2177-2198.	1.2	14
7	Clumped isotope signatures of nitrous oxide formed by bacterial denitrification. Geochimica Et Cosmochimica Acta, 2022, 328, 120-129.	1.6	1
8	Step-Scan Tuning of Vernier Quantum-Cascade Lasers for Rapid Detection of Volatile Organic Molecules. , 2022, , .		0
9	High-Resolution Quantum Cascade Laser Dual-Comb Spectroscopy with Accurate Absolute Frequency Scale. , 2022, , .		0
10	Advances in High-Precision NO2 Measurement by Quantum Cascade Laser Absorption Spectroscopy. Applied Sciences (Switzerland), 2021, 11, 1222.	1.3	6
11	Compact and lightweight mid-infrared laser spectrometer for balloon-borne water vapor measurements in the UTLS. Atmospheric Measurement Techniques, 2021, 14, 1365-1378.	1.2	9
12	COVID-19 lockdowns highlight a risk of increasing ozone pollution in European urban areas. Atmospheric Chemistry and Physics, 2021, 21, 4169-4185.	1.9	91
13	Up in the air! Trace-gas sensing aboard flying platforms. , 2021, , .		0
14	Automated fragment formula annotation for electron ionisation, high resolution mass spectrometry: application to atmospheric measurements of halocarbons. Journal of Cheminformatics, 2021, 13, 78.	2.8	4
15	Compact QCL Absorption Spectrometer for Balloon-borne Water Vapor Measurements in the Upper Atmosphere. , 2021, , .		0
16	Photolytic fractionation of seven singly and doubly substituted nitrous oxide isotopocules measured by quantum cascade laser absorption spectroscopy. Atmospheric Environment: X, 2020, 8, 100094.	0.8	2
17	First investigation and absolute calibration of clumped isotopes in N₂O by midâ€infrared laser spectroscopy. Rapid Communications in Mass Spectrometry, 2020, 34, e8836.	0.7	7
18	Long-term Observations of Atmospheric Halogenated Organic Trace Gases. Chimia, 2020, 74, 136.	0.3	2

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19	Denitrification Is the Main Nitrous Oxide Source Process in Grassland Soils According to Quasiâ€Continuous Isotopocule Analysis and Biogeochemical Modeling. Global Biogeochemical Cycles, 2020, 34, e2019GB006505.	1.9	11
20	The isotopic composition of atmospheric nitrous oxide observed at the high-altitude research station Jungfraujoch, Switzerland. Atmospheric Chemistry and Physics, 2020, 20, 6495-6519.	1.9	11
21	Evaluation of equivalent black carbon source apportionment using observations from Switzerland between 2008 and 2018. Atmospheric Measurement Techniques, 2020, 13, 1867-1885.	1.2	28
22	High-Resolution and Gapless Dual Comb Spectroscopy with Current-Tuned Quantum Cascade Lasers. , 2020, , .		1
23	High-resolution and gapless dual comb spectroscopy with current-tuned quantum cascade lasers. Optics Express, 2020, 28, 6197.	1.7	53
24	Integration and calibration of non-dispersive infrared (NDIR) CO₂ low-cost sensors and their operation in a sensor network covering Switzerland. Atmospheric Measurement Techniques, 2020, 13, 3815-3834.	1.2	25
25	A compact QCL spectrometer for mobile, high-precision methane sensing aboard drones. Atmospheric Measurement Techniques, 2020, 13, 4715-4726.	1.2	30
26	High-Resolution and Gapless Dual Comb Spectroscopy with Current-Tuned Quantum Cascade Lasers for Environmental Applications. , 2020, , .		1
27	Quantum cascade laser spectrometers for mobile trace-gas sensing. , 2020, , .		0
28	Gapless High-Resolution Dual Comb Spectroscopy with Current-Tuned Quantum Cascade Lasers. , 2020, , .		0
29	High-precision laser spectrometer for multiple greenhouse gas analysis in 1â€‰mL air from ice core samples. Atmospheric Measurement Techniques, 2020, 13, 6391-6406.	1.2	3
30	Multi-wavelength distributed feedback quantum cascade lasers for broadband trace gas spectroscopy. Semiconductor Science and Technology, 2019, 34, 083001.	1.0	10
31	Spectral Interleaving with Quantum Cascade Laser Frequency Combs. , 2019, , .		0
32	Quantifying Isotopic Signatures of Nâ„‚O Using Quantum Cascade Laser Absorption Spectroscopy. Chimia, 2019, 73, 232.	0.3	9
33	Recent advances in measurement techniques for atmospheric carbon monoxide and nitrous oxide observations. Atmospheric Measurement Techniques, 2019, 12, 5863-5878.	1.2	17
34	Attribution of N₂O sources in a grassland soil with laser spectroscopy based isotopocule analysis. Biogeosciences, 2019, 16, 3247-3266.	1.3	36
35	High-precision ethanol measurement by mid-IR laser absorption spectroscopy for metrological applications. Optics Express, 2019, 27, 5314.	1.7	15
36	Environmental and industrial trace gas sensing using quantum cascade lasers. , 2019, , .		0

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37	Mid-IR Laser Spectrometer for Balloon-borne Lower Stratospheric Water Vapor Measurements. , 2019, , .		1
38	Abundance and sources of atmospheric halocarbons in the Eastern Mediterranean. Atmospheric Chemistry and Physics, 2018, 18, 4069-4092.	1.9	12
39	A dual tracer ratio method for comparative emission measurements in an experimental dairy housing. Atmospheric Environment, 2018, 179, 12-22.	1.9	19
40	Development of a field-deployable method for simultaneous, real-time measurements of the four most abundant N₂O isotopocules. Isotopes in Environmental and Health Studies, 2018, 54, 1-15.	0.5	13
41	Mid-IR spectrometer for mobile, real-time urban NO₂ measurements. Atmospheric Measurement Techniques, 2018, 11, 2669-2681.	1.2	10
42	Mid-IR Laser Spectroscopy in Life Sciences: Medical and Forensic Applications. , 2018, , .		0
43	Breath acetone as a marker of energy balance: an exploratory study in healthy humans. Nutrition and Diabetes, 2018, 8, 50.	1.5	19
44	Multi-species trace gas sensing with dual-wavelength QCLs. Applied Physics B: Lasers and Optics, 2018, 124, 1.	1.1	28
45	Dual-wavelength DFB quantum cascade lasers: sources for multi-species trace gas spectroscopy. Applied Physics B: Lasers and Optics, 2018, 124, 1.	1.1	22
46	Laser driving and data processing concept for mobile trace gas sensing: Design and implementation. Review of Scientific Instruments, 2018, 89, 065107.	0.6	27
47	Human Breath Acetone Analysis by Mid-IR Laser Spectroscopy: Development and Application. , 2018, , .		4
48	Compact, circular, and optically stable multipass cell for mobile laser absorption spectroscopy. Optics Letters, 2018, 43, 2434.	1.7	51
49	Dual-wavelength DFB quantum cascade lasers for multi-species trace gas spectroscopy. , 2018, , .		0
50	Multi-Species, High-Precision MIR Trace Gas Detection for Environmental Applications. , 2018, , .		0
51	QCL absorption spectroscopy for lightweight and multi-species environmental applications. , 2018, , .		0
52	Tracking nitrous oxide emission processes at a suburban site with semicontinuous, in situ measurements of isotopic composition. Journal of Geophysical Research D: Atmospheres, 2017, 122, 1850-1870.	1.2	23
53	Using Isotopic Fingerprints to Trace Nitrous Oxide in the Atmosphere. Chimia, 2017, 71, 46-46.	0.3	2
54	Highly Selective Volatile Organic Compounds Breath Analysis Using a Broadly-Tunable Vertical-External-Cavity Surface-Emitting Laser. Analytical Chemistry, 2017, 89, 6377-6383.	3.2	18

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55	A cost-effective method for simulating city-wide air flow and pollutant dispersion at building resolving scale. Atmospheric Environment, 2017, 158, 181-196.	1.9	31
56	Surface ozone in the Southern Hemisphere: 20Âyears of data from aÂsite with a unique setting in El Tololo, Chile. Atmospheric Chemistry and Physics, 2017, 17, 6477-6492.	1.9	15
57	PathfinderTURB: an automatic boundary layer algorithm. Development, validation and application to study the impact on in situ measurements at the Jungfraujoch. Atmospheric Chemistry and Physics, 2017, 17, 10051-10070.	1.9	41
58	Dual-wavelength DFB quantum cascade lasers for NO and NO<inf>2</inf> trace gas analysis. , 2017, , .		0
59	Beam folding analysis and optimization of mask-enhanced toroidal multipass cells. Optics Letters, 2017, 42, 3137.	1.7	12
60	Evaluation of high-resolution GRAMMâ€“GRAL (v15.12/v14.8) NO_{<i>x</i>} simulations over the city of ZÃ¼rich, Switzerland. Geoscientific Model Development, 2017, 10, 3441-3459.	1.3	21
61	Multi-species Trace Gas Analysis with Dual-wavelength DFB-QCLs. , 2017, , .		0
62	Real-time analysis of <i>Î´</i>¹³C- and <i>Î´</i>D-CH₄ in ambient air with laser spectroscopy: method development and first intercomparison results. Atmospheric Measurement Techniques, 2016, 9, 263-280.	1.2	43
63	Dual-Section DFB-QCLs for Multi-Species Trace Gas Analysis. Photonics, 2016, 3, 24.	0.9	22
64	Assessment of recent advances in measurement techniques for atmospheric carbon dioxide and methane observations. Atmospheric Measurement Techniques, 2016, 9, 4737-4757.	1.2	31
65	Analysis of dual-section DFB-QCLs for spectroscopic applications. , 2016, , .		0
66	Circular paraboloid reflection cell for laser spectroscopic trace gas analysis. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 2016, 33, 913.	0.8	24
67	Validation of the Swiss methane emission inventory by atmospheric observations and inverse modelling. Atmospheric Chemistry and Physics, 2016, 16, 3683-3710.	1.9	103
68	In situ observations of the isotopic composition of methane at the Cabauw tall tower site. Atmospheric Chemistry and Physics, 2016, 16, 10469-10487.	1.9	77
69	Tracking New Halogenated Alkenes in the Atmosphere. Chimia, 2016, 70, 365.	0.3	2
70	Multi-species Trace Gas Analysis with Dual-section DFB-QCLs. , 2016, , .		0
71	Application of Mid-IR VECSEL in Life Sciences: Highly Specific Acetone Analysis in Human Breath. , 2016, , .		0
72	Multi-Component Trace Gas Spectroscopy Using Dual-Wavelength Quantum Cascade Lasers. Chimia, 2015, 69, 708-708.	0.3	0

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73	First on-line isotopic characterization of N₂O above intensively managed grassland. Biogeosciences, 2015, 12, 2517-2531.	1.3	44
74	Benefit-Risk Assessment of Diesel Particle Filters (DPFs): An Analytical and a Toxicological Challenge. Chimia, 2015, 69, 152-152.	0.3	1
75	Simultaneous measurement of NO and NO_2 by dual-wavelength quantum cascade laser spectroscopy. Optics Express, 2015, 23, 1512.	1.7	35
76	Isotopic evidence for nitrous oxide production pathways in a partial nitritation-anammox reactor. Water Research, 2015, 83, 258-270.	5.3	52
77	Highly Selective VOC Breath Analysis Using a 3.3 Âµm Broadly-Tunable VECSEL. , 2015, , .		0
78	Nitrous oxide and methane emissions and nitrous oxide isotopic composition from waste incineration in Switzerland. Waste Management, 2015, 35, 135-140.	3.7	30
79	MIR Spectroscopy beyond trace levels - environmental and industrial applications. , 2015, , .		0
80	Cylindrical multipass reflection cells for optical trace gas sensing. , 2015, , .		1
81	Site-specific 15N isotopic signatures of abiotically produced N2O. Geochimica Et Cosmochimica Acta, 2014, 139, 72-82.	1.6	103
82	Mid-infrared spectroscopy for gases and liquids based on quantum cascade technologies. Analyst, The, 2014, 139, 2039-2046.	1.7	45
83	Methane preconcentration by adsorption: a methodology for materials and conditions selection. Adsorption, 2014, 20, 657-666.	1.4	35
84	Novel laser spectroscopic technique for continuous analysis of N₂O isotopomers â€“ application and intercomparison with isotope ratio mass spectrometry. Rapid Communications in Mass Spectrometry, 2013, 27, 216-222.	0.7	50
85	N₂O emissions and source processes in snow-covered soils in the Swiss Alps. Isotopes in Environmental and Health Studies, 2013, 49, 520-531.	0.5	15
86	PCDD/F Formation in an Iron/Potassium-Catalyzed Diesel Particle Filter. Environmental Science & Technology, 2013, 47, 6510-6517.	4.6	26
87	Isotope Signatures of N₂O in a Mixed Microbial Population System: Constraints on N₂O Producing Pathways in Wastewater Treatment. Environmental Science & Technology, 2013, 47, 130118101927005.	4.6	59
88	Compact multipass optical cell for laser spectroscopy. Optics Letters, 2013, 38, 257.	1.7	96
89	Highly sensitive and fast detection of propaneâ€“butane using a 3ÂÎ¼m quantum cascade laser. Applied Optics, 2013, 52, 4613.	0.9	12
90	Tracking isotopic signatures of CO₂ at the high altitude site Jungfraujoch with laser spectroscopy: analytical improvements and representative results. Atmospheric Measurement Techniques, 2013, 6, 1659-1671.	1.2	44

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91	Selective measurements of NO, NO₂ and NO_y in the free troposphere using quantum cascade laser spectroscopy. Atmospheric Measurement Techniques, 2013, 6, 927-936.	1.2	47
92	Site selective real-time measurements of atmospheric N₂O isotopomers by laser spectroscopy. Atmospheric Measurement Techniques, 2012, 5, 1601-1609.	1.2	72
93	Temperature Dependence and Interferences of NO and N₂O Microelectrodes Used in Wastewater Treatment. Environmental Science & Technology, 2012, 46, 2257-2266.	4.6	17
94	Mechanisms of N2O production in biological wastewater treatment under nitrifying and denitrifying conditions. Water Research, 2012, 46, 1027-1037.	5.3	443
95	Effects of a Combined Diesel Particle Filter-DeNOx System (DPN) on Reactive Nitrogen Compounds Emissions: A Parameter Study. Environmental Science & Technology, 2012, 46, 13317-13325.	4.6	25
96	Ammonia emissions and emission factors of naturally ventilated dairy housing with solid floors and an outdoor exercise area in Switzerland. Atmospheric Environment, 2012, 47, 183-194.	1.9	48
97	High-precision trace gas measurements using quantum cascade lasers and novel star-like cell designs. , 2012, , .		0
98	Application of a quantum cascade laser-based spectrometer in a closed chamber system for real-time Î´13C and Î´18O measurements of soil-respired CO2. Agricultural and Forest Meteorology, 2011, 151, 39-48.	1.9	39
99	Continuous isotopic composition measurements of tropospheric CO₂ at Jungfraujoch (3580 m a.s.l.), Switzerland: real-time observation of regional pollution events. Atmospheric Chemistry and Physics, 2011, 11, 1685-1696.	1.9	72
100	Reactive nitrogen compounds (RNCs) in exhaust of advanced PMâ€“NOx abatement technologies for future diesel applications. Atmospheric Environment, 2011, 45, 3203-3209.	1.9	39
101	Impact of Low- and High-Oxidation Diesel Particulate Filters on Genotoxic Exhaust Constituents. Environmental Science & Technology, 2010, 44, 1078-1084.	4.6	48
102	N2O exchange over managed grassland: Application of a quantum cascade laser spectrometer for micrometeorological flux measurements. Agricultural and Forest Meteorology, 2010, 150, 775-785.	1.9	87
103	Hot-Recycling of Tar-Containing Asphalt Pavements. Road Materials and Pavement Design, 2010, 11, 29-46.	2.0	3
104	Hot-Recycling of Tar-Containing Asphalt Pavements. Emission Measurements in the Laboratory and in the Field. Road Materials and Pavement Design, 2010, 11, 29-46.	2.0	1
105	Emissions of tar-containing binders: Field studies. Journal of Environmental Science and Health - Part A Toxic/Hazardous Substances and Environmental Engineering, 2009, 44, 29-37.	0.9	2
106	New method for isotopic ratio measurements of atmospheric carbon dioxide using a 4.3ÂÎ¼m pulsed quantum cascade laser. Applied Physics B: Lasers and Optics, 2008, 90, 301-309.	1.1	107
107	High precision and continuous field measurements of Î´13C and Î´18O in carbon dioxide with a cryogen-free QCLAS. Applied Physics B: Lasers and Optics, 2008, 92, 451.	1.1	87
108	Quantum cascade laser based spectrometer for in situ stable carbon dioxide isotope measurements. Infrared Physics and Technology, 2008, 51, 198-206.	1.3	62

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109	Determination of N_2O isotopomers with quantum cascade laser based absorption spectroscopy. Optics Express, 2008, 16, 9239.	1.7	73
110	Secondary Effects of Catalytic Diesel Particulate Filters: Conversion of PAHs versus Formation of Nitro-PAHs. Environmental Science & Technology, 2008, 42, 3773-3779.	4.6	107
111	Continuous field measurements of Î´¹³Câ€“CO₂ and trace gases by FTIR spectroscopy. Isotopes in Environmental and Health Studies, 2008, 44, 241-251.	0.5	36
112	Emissions of tar-containing binders: a laboratory study. Journal of Environmental Science and Health - Part A Toxic/Hazardous Substances and Environmental Engineering, 2007, 42, 241-247.	0.9	10
113	Isotopic Ratio Measurements of Atmospheric Carbon Dioxide Using a 4.3 μm Pulsed Quantum Cascade Laser. , 2007, , .		0
114	Secondary Effects of Catalytic Diesel Particulate Filters:â€‰ Copper-Induced Formation of PCDD/Fs. Environmental Science & Technology, 2007, 41, 5789-5794.	4.6	34
115	Methodical study of nitrous oxide eddy covariance measurements using quantum cascade laser spectrometery over a Swiss forest. Biogeosciences, 2007, 4, 927-939.	1.3	85
116	Experimental assessment of N2O background fluxes in grassland systems. Tellus, Series B: Chemical and Physical Meteorology, 2007, 59, 470-482.	0.8	83
117	Ammonia monitoring at trace level using photoacoustic spectroscopy in industrial and environmental applications. Spectrochimica Acta - Part A: Molecular and Biomolecular Spectroscopy, 2004, 60, 3259-3268.	2.0	120
118	Time-resolved ammonia measurement in vehicle exhaust. International Journal of Environment and Pollution, 2004, 22, 342.	0.2	30
119	Lightâ€induced redox cycling of iron in circumneutral lakes. Limnology and Oceanography, 2001, 46, 49-61.	1.6	130
120	Oxidation Kinetics of Fe(II) in a Eutrophic Swiss Lake. Environmental Science & Technology, 1998, 32, 2990-2996.	4.6	131