Bertrand Bessagnet

List of Publications by Year
in descending order

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136 papers	7,705 citations	57631 44 h-index	64668 79 g-index
151 all docs	151 docs citations	151 times ranked	6247 citing authors

#	Article	IF	Citations
1	Evolution of anthropogenic and biomass burning emissions of air pollutants at global and regional scales during the 1980â€“2010 period. Climatic Change, 2011, 109, 163-190.	1.7	740
2	CHIMERE 2013: a model for regional atmospheric composition modelling. Geoscientific Model Development, 2013, 6, 981-1028.	1.3	392
3	Aerosol modeling with CHIMEREâ€”preliminary evaluation at the continental scale. Atmospheric Environment, 2004, 38, 2803-2817.	1.9	315
4	Impact of lockdown measures to combat Covid-19 on air quality over western Europe. Science of the Total Environment, 2020, 741, 140426.	3.9	263
5	Evaluation of long-term ozone simulations from seven regional air quality models and their ensemble. Atmospheric Environment, 2007, 41, 2083-2097.	1.9	258
6	Evaluation and intercomparison of Ozone and PM10 simulations by several chemistry transport models over four European cities within the CityDelta project. Atmospheric Environment, 2007, 41, 173-188.	1.9	230
7	Operational model evaluation for particulate matter in Europe and North America in the context of AQMEII. Atmospheric Environment, 2012, 53, 75-92.	1.9	214
8	A regional air quality forecasting system over Europe: the MACC-II daily ensemble production. Geoscientific Model Development, 2015, 8, 2777-2813.	1.3	214
9	Model evaluation and ensemble modelling of surface-level ozone in Europe and North America in the context of AQMEII. Atmospheric Environment, 2012, 53, 60-74.	1.9	192
10	CityDelta: A model intercomparison study to explore the impact of emission reductions in European cities in 2010. Atmospheric Environment, 2007, 41, 189-207.	1.9	189
11	Modeling of gas and aerosol with WRF/Chem over Europe: Evaluation and sensitivity study. Journal of Geophysical Research, 2012, 117, .	3.3	185
12	CHIMERE-2017: from urban to hemispheric chemistry-transport modeling. Geoscientific Model Development, 2017, 10, 2397-2423.	1.3	168
13	Air quality trends in Europe over the past decade: a first multi-model assessment. Atmospheric Chemistry and Physics, 2011, 11, 11657-11678.	1.9	164
14	On the contribution of natural Aeolian sources to particulate matter concentrations in Europe: Testing hypotheses with a modelling approach. Atmospheric Environment, 2005, 39, 3291-3303.	1.9	158
15	Regional modeling of carbonaceous aerosols over Europeâ€”focus on secondary organic aerosols. Journal of Atmospheric Chemistry, 2008, 61, 175-202.	1.4	157
16	Predictability of European air quality: Assessment of 3 years of operational forecasts and analyses by the PREV'AIR system. Journal of Geophysical Research, 2008, 113, .	3.3	134
17	Prev'air: An Operational Forecasting and Mapping System for Air Quality in Europe. Bulletin of the American Meteorological Society, 2009, 90, 73-84.	1.7	122
18	Modeling organic aerosols during MILAGRO: importance of biogenic secondary organic aerosols. Atmospheric Chemistry and Physics, 2009, 9, 6949-6981.	1.9	119

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19	Presentation of the EURODELTA III intercomparison exercise â€“ evaluation of the chemistry transport models' performance on criteria pollutants and joint analysis with meteorology. Atmospheric Chemistry and Physics, 2016, 16, 12667-12701.	1.9	109
20	Formation of organic aerosol in the Paris region during the MEGAPOLI summer campaign: evaluation of the volatility-basis-set approach within the CHIMERE model. Atmospheric Chemistry and Physics, 2013, 13, 5767-5790.	1.9	105
21	Skill and uncertainty of a regional air quality model ensemble. Atmospheric Environment, 2009, 43, 4822-4832.	1.9	87
22	European atmosphere in 2050, a regional air quality and climate perspective under CMIP5 scenarios. Atmospheric Chemistry and Physics, 2013, 13, 7451-7471.	1.9	87
23	Impact of realistic hourly emissions profiles on air pollutants concentrations modelled with CHIMERE. Atmospheric Environment, 2012, 49, 233-244.	1.9	86
24	Performance of European chemistry transport models as function of horizontal resolution. Atmospheric Environment, 2015, 112, 90-105.	1.9	85
25	Impact of surface roughness and soil texture on mineral dust emission fluxes modeling. Journal of Geophysical Research D: Atmospheres, 2013, 118, 6505-6520.	1.2	83
26	Analysis of model responses to emission-reduction scenarios within the CityDelta project. Atmospheric Environment, 2007, 41, 208-220.	1.9	81
27	Future air quality in Europe: a multi-model assessment of projected exposure to ozone. Atmospheric Chemistry and Physics, 2012, 12, 10613-10630.	1.9	81
28	Trace gas/aerosol boundary concentrations and their impacts on continental-scale AQMEII modeling domains. Atmospheric Environment, 2012, 53, 38-50.	1.9	72
29	High-resolution air quality simulation over Europe with the chemistry transport model CHIMERE. Geoscientific Model Development, 2015, 8, 21-42.	1.3	72
30	Atmospheric composition forecasting in Europe. Annales Geophysicae, 2010, 28, 61-74.	0.6	72
31	Impact of dry deposition of semi-volatile organic compounds on secondary organic aerosols. Atmospheric Environment, 2010, 44, 1781-1787.	1.9	62
32	Modelling street level PM₁₀ concentrations across Europe: source apportionment and possible futures. Atmospheric Chemistry and Physics, 2015, 15, 1539-1553.	1.9	62
33	Long-term urban aerosol simulation versus routine particulate matter observations. Atmospheric Environment, 2005, 39, 5851-5864.	1.9	60
34	APIFLAME v1.0: high-resolution fire emission model and application to the Euro-Mediterranean region. Geoscientific Model Development, 2014, 7, 587-612.	1.3	60
35	Improving ammonia emissions in air quality modelling for France. Atmospheric Environment, 2014, 92, 584-595.	1.9	60
36	Assessing in near real time the impact of the April 2010 EyjafjallajÃ¶kull ash plume on air quality. Atmospheric Environment, 2011, 45, 1217-1221.	1.9	59

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37	The impact of MM5 and WRF meteorology over complex terrain on CHIMERE model calculations. Atmospheric Chemistry and Physics, 2009, 9, 6611-6632.	1.9	58
38	Origin of particulate matter pollution episodes in wintertime over the Paris Basin. Atmospheric Environment, 2005, 39, 6159-6174.	1.9	55
39	Impact of aerosol direct radiative forcing on the radiative budget, surface heat fluxes, and atmospheric dynamics during the heat wave of summer 2003 over western Europe: A modeling study. Journal of Geophysical Research, 2011, 116, n/a-n/a.	3.3	55
40	Modeling dust emissions and transport within Europe: The Ukraine March 2007 event. Journal of Geophysical Research, 2008, 113, .	3.3	54
41	Moving towards ambitious climate policies: Monetised health benefits from improved air quality could offset mitigation costs in Europe. Environmental Science and Policy, 2015, 50, 252-269.	2.4	54
42	Monoterpene emissions from Beech (Fagus sylvatica) in a French forest and impact on secondary pollutants formation at regional scale. Atmospheric Environment, 2005, 39, 3535-3547.	1.9	53
43	Modelling NO₂ concentrations at the street level in the GAINS integrated assessment model: projections under current legislation. Atmospheric Chemistry and Physics, 2014, 14, 813-829.	1.9	53
44	Characterising an intense PM pollution episode in March 2015 in France from multi-site approach and near real time data: Climatology, variabilities, geographical origins and model evaluation. Atmospheric Environment, 2017, 155, 68-84.	1.9	52
45	The sensitivity of the CHIMERE model to emissions reduction scenarios on air quality in Northern Italy. Atmospheric Environment, 2009, 43, 1897-1907.	1.9	51
46	A model evaluation of coarse-mode nitrate heterogeneous formation on dust particles. Atmospheric Environment, 2006, 40, 4158-4171.	1.9	50
47	Can further mitigation of ammonia emissions reduce exceedances of particulate matter air quality standards?. Environmental Science and Policy, 2014, 44, 149-163.	2.4	50
48	Evaluating the capability of regional-scale air quality models to capture the vertical distribution of pollutants. Geoscientific Model Development, 2013, 6, 791-818.	1.3	49
49	Spatial inter-comparison of Top-down emission inventories in European urban areas. Atmospheric Environment, 2018, 173, 142-156.	1.9	49
50	Is the ozone climate penalty robust in Europe?. Environmental Research Letters, 2015, 10, 084015.	2.2	48
51	Modeled deposition of nitrogen and sulfur in Europe estimated by 14 air quality model systems: evaluation, effects of changes in emissions and implications for habitat protection. Atmospheric Chemistry and Physics, 2018, 18, 10199-10218.	1.9	47
52	Investigating impacts of chemistry and transport model formulation on model performance at European scale. Atmospheric Environment, 2012, 53, 93-109.	1.9	44
53	Direct radiative effect of the Russian wildfires and its impact on air temperature and atmospheric dynamics during August 2010. Atmospheric Chemistry and Physics, 2014, 14, 1999-2013.	1.9	44
54	Evaluation of regional climate simulations for air quality modelling purposes. Climate Dynamics, 2013, 40, 2515-2533.	1.7	43

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55	A multi-model comparison of meteorological drivers of surface ozone over Europe. Atmospheric Chemistry and Physics, 2018, 18, 12269-12288.	1.9	42
56	Multi-year assessment of photochemical air quality simulation over Spain. Environmental Modelling and Software, 2009, 24, 63-73.	1.9	41
57	EURODELTA-Trends, a multi-model experiment of air quality hindcast in Europe over 1990â€“2010. Geoscientific Model Development, 2017, 10, 3255-3276.	1.3	41
58	An evaluation of European nitrogen and sulfur wet deposition and their trends estimated by six chemistry transport models for the period 1990â€“2010. Atmospheric Chemistry and Physics, 2019, 19, 379-405.	1.9	41
59	Comparison of aerosol chemistry transport model simulations with lidar and Sun photometer observations at a site near Paris. Journal of Geophysical Research, 2004, 109, .	3.3	40
60	Impact of meteorology on air quality modeling over the Po valley in northern Italy. Atmospheric Environment, 2012, 51, 303-310.	1.9	40
61	Mapping of PM10 surface concentrations derived from satellite observations of aerosol optical thickness over South-Eastern France. Atmospheric Research, 2009, 91, 1-8.	1.8	36
62	Development of an inorganic and organic aerosol model (CHIMERE) Tj ETQq0 0 0 rgBT /Overlock 10 Tf 50 467 Td (2017<i&g Model Development, 2018, 11, 165-194.	1.3	36
63	On the radiative impact of aerosols on photolysis rates: comparison of simulations and observations in the Lampedusa island during the ChArMEx/ADRIMED campaign. Atmospheric Chemistry and Physics, 2016, 16, 1219-1244.	1.9	34
64	Risk of breast cancer associated with long-term exposure to benzo[a]pyrene (BaP) air pollution: Evidence from the French E3N cohort study. Environment International, 2021, 149, 106399.	4.8	33
65	Aerosol chemical and optical properties over the Paris area within ESQUIF project. Atmospheric Chemistry and Physics, 2006, 6, 3257-3280.	1.9	31
66	Is regional air quality model diversity representative of uncertainty for ozone simulation?. Geophysical Research Letters, 2006, 33, .	1.5	30
67	Evaluation of an aerosol optical scheme in the chemistry-transport model CHIMERE. Atmospheric Environment, 2010, 44, 3688-3699.	1.9	30
68	Evidence of the aerosol coreâ€shell mixing state over Europe during the heat wave of summer 2003 by using CHIMERE simulations and AERONET inversions. Geophysical Research Letters, 2009, 36, .	1.5	29
69	POMI: a model inter-comparison exercise over the Po Valley. Air Quality, Atmosphere and Health, 2013, 6, 701-715.	1.5	29
70	Trends of inorganic and organic aerosols and precursor gases in Europe: insights from the EURODELTA multi-model experiment over the 1990â€“2010 period. Geoscientific Model Development, 2019, 12, 4923-4954.	1.3	29
71	Aerosol modelling and validation during ESCOMPTE 2001. Atmospheric Environment, 2005, 39, 1539-1550.	1.9	27
72	On the impact of the vertical resolution on chemistry-transport modelling. Atmospheric Environment, 2013, 67, 370-384.	1.9	27

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73	Ozone and aerosol tropospheric concentrations variability analyzed using the ADRIMED measurements and the WRF and CHIMERE models. Atmospheric Chemistry and Physics, 2015, 15, 6159-6182.	1.9	27
74	Joint analysis of deposition fluxes and atmospheric concentrations of inorganic nitrogen and sulphur compounds predicted by six chemistry transport models in the frame of the EURODELTAIII project. Atmospheric Environment, 2017, 151, 152-175.	1.9	27
75	The CHIMERE v2020r1 online chemistry-transport model. Geoscientific Model Development, 2021, 14, 6781-6811.	1.3	27
76	Aerosol distribution over the western Mediterranean basin during a Tramontane/Mistral event. Annales Geophysicae, 2007, 25, 2271-2291.	0.6	24
77	Exploration of the influence of environmental conditions on secondary organic aerosol formation and organic species properties using explicit simulations: development of the VBS-GECKO parameterization. Atmospheric Chemistry and Physics, 2018, 18, 13411-13428.	1.9	24
78	Fractal modelling of carbonaceous aerosolsâ€"application to car exhaust plumes. Atmospheric Environment, 2001, 35, 4751-4762.	1.9	23
79	Contribution of Saharan dust on radionuclide aerosol activity levels in Europe? The 21â€"22 February 2004 case study. Journal of Geophysical Research, 2009, 114, .	3.3	21
80	Frontiers in air quality modelling. Geoscientific Model Development, 2014, 7, 203-210.	1.3	20
81	One-year measurements of secondary organic aerosol (SOA) markers in the Paris region (France): Concentrations, gas/particle partitioning and SOA source apportionment. Science of the Total Environment, 2021, 757, 143921.	3.9	19
82	Evaluation of WRF model performance in different European regions with the DELTA-FAIRMODE evaluation tool. International Journal of Environment and Pollution, 2012, 50, 83.	0.2	18
83	Influence of the aerosol solar extinction on photochemistry during the 2010 Russian wildfires episode. Atmospheric Chemistry and Physics, 2015, 15, 10983-10998.	1.9	18
84	ORISAM-TM4: a new global sectional multi-component aerosol model including SOA formation - Focus on carbonaceous BC and OC aerosols. Tellus, Series B: Chemical and Physical Meteorology, 2007, 59, 283-302.	0.8	17
85	Lidar signal simulation for the evaluation of aerosols in chemistry transport models. Geoscientific Model Development, 2012, 5, 1543-1564.	1.3	17
86	High Resolution Chemistry Transport Modeling with the On-Line CHIMERE-WRF Model over the French Alpsâ€"Analysis of a Feedback of Surface Particulate Matter Concentrations on Mountain Meteorology. Atmosphere, 2020, 11, 565.	1.0	17
87	Why is the city's responsibility for its air pollution often underestimated? A focus on PM_{2.5}. Atmospheric Chemistry and Physics, 2021, 21, 18195-18212.	1.9	17
88	Long-term health impact assessment of total PM2.5 in Europe during the 1990â€"2015 period. Atmospheric Environment: X, 2019, 3, 100032.	0.8	16
89	Observations and regional modeling of aerosol optical properties, speciation and size distribution over Northern Africa and western Europe. Atmospheric Chemistry and Physics, 2016, 16, 12961-12982.	1.9	15
90	Emissions of Carbonaceous Particulate Matter and Ultrafine Particles from Vehiclesâ€"A Scientific Review in a Cross-Cutting Context of Air Pollution and Climate Change. Applied Sciences (Switzerland), 2022, 12, 3623.	1.3	15

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91	Modelling Some Heavy Metals Air Concentration in Europe. Water, Air, and Soil Pollution, 2012, 223, 5227-5242.	1.1	12
92	0-D-Modelling of Carbonaceous Aerosols over Greater Paris Focusing on the Organic Particle Formation. Journal of Atmospheric Chemistry, 2005, 51, 207-221.	1.4	11
93	An Evaluation of the CHIMERE Chemistry Transport Model to Simulate Dust Outbreaks across the Northern Hemisphere in March 2014. Atmosphere, 2017, 8, 251.	1.0	11
94	A statistical physics approach to perform fast highly-resolved air quality simulations â€“ A new step towards the meta-modelling of chemistry transport models. Environmental Modelling and Software, 2019, 116, 100-109.	1.9	11
95	EURODELTA III exercise: An evaluation of air quality modelsâ€™ capacity to reproduce the carbonaceous aerosol. Atmospheric Environment: X, 2019, 2, 100018.	0.8	11
96	Cold-start emissions from petrol and diesel vehicles according to the emissions regulations (from) Tj ETQq0 0 0 rgBT /Overlock 10 Tf 50	0.1	10
97	Recent ozone trends in the Chinese free troposphere: role of the local emission reductions and meteorology. Atmospheric Chemistry and Physics, 2021, 21, 16001-16025.	1.9	10
98	Simulating secondary organic aerosol from anthropogenic and biogenic precursors: comparison to outdoor chamber experiments, effect of oligomerization on SOA formation and reactive uptake of aldehydes. Atmospheric Chemistry and Physics, 2018, 18, 15743-15766.	1.9	9
99	Modeling organic aerosol over Europe in summer conditions with the VBS-GECKO parameterization: sensitivity to secondary organic compound properties and IVOC (intermediate-volatility organic) Tj ETQq1 1 0.784314 rgBT /Overlock 1	1.9	9
100	Covid-19 Lockdown in Spring 2020 in France Provided Unexpected Opportunity to Assess Health Impacts of Falls in Air Pollution. Frontiers in Sustainable Cities, 2021, 3, .	1.2	9
101	Ozone pollution during the COVID-19 lockdown in the spring of 2020 over Europe, analysed from satellite observations, in situ measurements, and models. Atmospheric Chemistry and Physics, 2022, 22, 4471-4489.	1.9	9
102	Impact of meteorological modelling on air quality: summer and winter episodes in the Po valley (Northern Italy). International Journal of Environment and Pollution, 2012, 50, 111.	0.2	7
103	Impacts of future air pollution mitigation strategies on the aerosol direct radiative forcing over Europe. Atmospheric Environment, 2012, 62, 451-460.	1.9	7
104	Modelling the mineralogical composition and solubility of mineral dust in the Mediterranean area with CHIMERE 2017r4. Geoscientific Model Development, 2020, 13, 2051-2071.	1.3	7
105	Impact of Physics Parameterizations on High-Resolution Air Quality Simulations over the Paris Region. Atmosphere, 2020, 11, 618.	1.0	7
106	Chronic Low-Dose Exposure to Xenoestrogen Ambient Air Pollutants and Breast Cancer Risk: XENAIR Protocol for a Case-Control Study Nested Within the French E3N Cohort. JMIR Research Protocols, 2020, 9, e15167.	0.5	7
107	Eurodelta multi-model simulated and observed particulate matterÂtrends in Europe in the period ofÂ1990â€“2010. Atmospheric Chemistry and Physics, 2022, 22, 7207-7257.	1.9	7
108	Modeling exceptional high concentrations of carbonaceous aerosols observed at Pic du Midi in springâ€“summer 2003: Comparison with Sonnblick and Puy de DÃ´me. Atmospheric Environment, 2008, 42, 5140-5149.	1.9	6

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109	What Can We Expect from Data Assimilation for Air Quality Forecast? Part I: Quantification with Academic Test Cases. Journal of Atmospheric and Oceanic Technology, 2019, 36, 269-279.	0.5	6
110	Long-term atmospheric exposure to PCB153 and breast cancer risk in a case-control study nested in the French E3N cohort from 1990 to 2011. Environmental Research, 2021, 195, 110743.	3.7	6
111	Modelling Arsenic, Lead, Cadmium and Nickel Ambient Air Concentrations in Spain. , 2011, , .		5
112	Bridging the scales in a eulerian air quality model to assess megacity export of pollution. Environmental Modelling and Software, 2013, 46, 271-282.	1.9	4
113	Simulation of size-segregated aerosol chemical composition over northern Italy in clear sky and wind calm conditions. Atmospheric Research, 2013, 125-126, 1-11.	1.8	4
114	Deep learning techniques applied to super-resolution chemistry transport modeling for operational uses. Environmental Research Communications, 2021, 3, 085001.	0.9	4
115	An additive geostatistical model for mixing total and partial PM10 observations with CHIMERE rCTM. Atmospheric Environment, 2018, 189, 61-79.	1.9	3
116	Impact of Lightning NOx Emissions on Atmospheric Composition and Meteorology in Africa and Europe. Atmosphere, 2020, 11, 1128.	1.0	3
117	Role of ecosystem-atmosphere exchanges of semi-volatile organic compounds in organic aerosol formation. Atmospheric Environment, 2021, 263, 118541.	1.9	3
118	Assessing the Impact of Local Policies on PM2.5 Concentration Levels: Application to 10 European Cities. Sustainability, 2022, 14, 6384.	1.6	3
119	A multi-pollutant and multi-sectorial approach to screening the consistency of emission inventories. Geoscientific Model Development, 2022, 15, 5271-5286.	1.3	3
120	Chapter 3.4 PREVâ€™AIR: A platform for air quality monitoring and forecasting. Developments in Environmental Science, 2007, , 293-300.	0.5	2
121	Evaluation of some SOA formation schemes for the oxidation of anthropogenic gases against experiments in two outdoor chambers. International Journal of Environment and Pollution, 2016, 59, 43.	0.2	2
122	What Can We Expect from Data Assimilation for Air Quality Forecast? Part II: Analysis with a Semi-Real Case. Journal of Atmospheric and Oceanic Technology, 2019, 36, 1433-1448.	0.5	2
123	An alternative way to evaluate chemistry-transport model variability. Geoscientific Model Development, 2017, 10, 1199-1208.	1.3	1
124	An evaluation of SOA modelling in the Madrid metropolitan area. , 2008, , .		1
125	Modelling aerosol molecular markers in a 3D air quality model: Focus on anthropogenic organic markers. Science of the Total Environment, 2022, , 155360.	3.9	1
126	Chapter 5.3 On the contribution of the heterogeneous chemistry to nitrate concentrations over Europe based on modeling results and long-term and campaign measurements. Developments in Environmental Science, 2007, , 503-513.	0.5	0

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127	Poster 11 Long-term evaluation of secondary atmospheric pollution over Italy. Developments in Environmental Science, 2007, 6, 761-763.	0.5	0
128	An <i>N</i>-dimensional Fortran interpolation programme (NterGeo.v2020a) for geophysics sciences â€“ application to a back-trajectory programme (Backplumes.v2020r1) using CHIMERE or WRF outputs. Geoscientific Model Development, 2021, 14, 91-106.	1.3	0
129	A Statistical Approach to Improve Air Quality Forecasts in the PREVâ€™AIR System. NATO Science for Peace and Security Series C: Environmental Security, 2014, , 205-209.	0.1	0
130	Impact of Fire Emissions on Air Quality in the Euro-Mediterranean Region. NATO Science for Peace and Security Series C: Environmental Security, 2014, , 363-367.	0.1	0
131	Ensemble Forecasting Coupled with Data Assimilation, and Threshold Exceedance Detection on Prevâ€™Air. NATO Science for Peace and Security Series C: Environmental Security, 2014, , 211-214.	0.1	0
132	Impact of Vertical and Horizontal Resolutions on Chemistry Transport Modelling. Springer Proceedings in Complexity, 2014, , 269-274.	0.2	0
133	Application of Performance Indicators Based on Observation Uncertainty to Evaluate a Europe-Wide Model Simulation at Urban Scale. Springer Proceedings in Complexity, 2014, , 499-504.	0.2	0
134	Le rÃ1e de lâ€™agriculture sur les concentrations en particules dans lâ€™atmosphÃ¨re et lâ€™apport de la modÃ©lisation. Pollution Atmospherique, 2016, , .	0.1	0
135	Aide aux dÃ©cideurs - Ã‰valuation des coÃ»ts et des bÃ©nÃ©fices sanitaires de politiques de lutte contre la pollution de lâ€™air. Pollution Atmospherique, 2017, , .	0.1	0
136	Design and implementation of a new module to evaluate the cost of air pollutant abatement measures. Journal of Environmental Management, 2022, 317, 115486.	3.8	0