# Fleur Couvreux

## List of Publications by Citations



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|---|---|---|---|
| 56 papers | 2,025 citations | 23 h-index | 44 g-index |
| 61 ext. papers | 2,349 ext. citations | 5.1 avg, IF | 4.62 L-index |

| # | Paper | IF | Citations |
|---|---|---|---|
| 56 | Frequency of Sahelian storm initiation enhanced over mesoscale soil-moisture patterns. *Nature Geoscience*, **2011**, 4, 430-433 | 18.3 | 190 |
| 55 | Controls on precipitation and cloudiness in simulations of trade-wind cumulus as observed during RICO. *Journal of Advances in Modeling Earth Systems*, **2011**, 3, n/a-n/a | 7.1 | 189 |
| 54 | A Parameterization of Dry Thermals and Shallow Cumuli for Mesoscale Numerical Weather Prediction. *Boundary-Layer Meteorology*, **2009**, 132, 83-106 | 3.4 | 182 |
| 53 | A Diagnostic for Evaluating the Representation of Turbulence in Atmospheric Models at the Kilometric Scale. *Journals of the Atmospheric Sciences*, **2011**, 68, 3112-3131 | 2.1 | 129 |
| 52 | The BLLAST field experiment: Boundary-Layer Late Afternoon and Sunset Turbulence. *Atmospheric Chemistry and Physics*, **2014**, 14, 10931-10960 | 6.8 | 126 |
| 51 | Overview of the Meso-NH model version 5.4 and its applications. *Geoscientific Model Development*, **2018**, 11, 1929-1969 | 6.3 | 114 |
| 50 | Parameterization of the Dry Convective Boundary Layer Based on a Mass Flux Representation of Thermals. *Journals of the Atmospheric Sciences*, **2002**, 59, 1105-1123 | 2.1 | 87 |
| 49 | Understanding the Daily Cycle of Evapotranspiration: A Method to Quantify the Influence of Forcings and Feedbacks. *Journal of Hydrometeorology*, **2010**, 11, 1405-1422 | 3.7 | 74 |
| 48 | Resolved Versus Parametrized Boundary-Layer Plumes. Part I: A Parametrization-Oriented Conditional Sampling in Large-Eddy Simulations. *Boundary-Layer Meteorology*, **2010**, 134, 441-458 | 3.4 | 64 |
| 47 | Water-vapour variability within a convective boundary-layer assessed by large-eddy simulations and IHOP_2002 observations. *Quarterly Journal of the Royal Meteorological Society*, **2005**, 131, 2665-2693 | 6.4 | 58 |
| 46 | Resolved Versus Parametrized Boundary-Layer Plumes. Part II: Continuous Formulations of Mixing Rates for Mass-Flux Schemes. *Boundary-Layer Meteorology*, **2010**, 135, 469-483 | 3.4 | 54 |
| 45 | Six hundred years of South American tree rings reveal an increase in severe hydroclimatic events since mid-20th century. *Proceedings of the National Academy of Sciences of the United States of America*, **2020**, 117, 16816-16823 | 11.5 | 51 |
| 44 | Diurnal and Seasonal Cycles of Cloud Occurrences, Types, and Radiative Impact over West Africa. *Journal of Applied Meteorology and Climatology*, **2012**, 51, 534-553 | 2.7 | 48 |
| 43 | Control of deep convection by sub-cloud lifting processes: the ALP closure in the LMDZ5B general circulation model. *Climate Dynamics*, **2013**, 40, 2271-2292 | 4.2 | 45 |
| 42 | Synoptic variability of the monsoon flux over West Africa prior to the onset. *Quarterly Journal of the Royal Meteorological Society*, **2010**, 136, 159-173 | 6.4 | 39 |
| 41 | Atmospheric transport and chemistry of trace gases in LMDz5B: evaluation and implications for inverse modelling. *Geoscientific Model Development*, **2015**, 8, 129-150 | 6.3 | 37 |
| 40 | Life Cycle of a Mesoscale Circular Gust Front Observed by a C-Band Doppler Radar in West Africa. *Monthly Weather Review*, **2011**, 139, 1370-1388 | 2.4 | 37 |

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| 39 | Negative water vapour skewness and dry tongues in the convective boundary layer: observations and large-eddy simulation budget analysis. *Boundary-Layer Meteorology*, **2007**, 123, 269-294 | 3.4 | 35 |
| 38 | Initiation of daytime local convection in a semi-arid region analysed with high-resolution simulations and AMMA observations. *Quarterly Journal of the Royal Meteorological Society*, **2012**, 138, 56-71 | 6.4 | 29 |
| 37 | Deep Convection Triggering by Boundary Layer Thermals. Part I: LES Analysis and Stochastic Triggering Formulation. *Journals of the Atmospheric Sciences*, **2014**, 71, 496-514 | 2.1 | 27 |
| 36 | Observations of Diurnal Cycles Over a West African Meridional Transect: Pre-Monsoon and Full-Monsoon Seasons. *Boundary-Layer Meteorology*, **2012**, 144, 329-357 | 3.4 | 26 |
| 35 | Resolved Versus Parametrized Boundary-Layer Plumes. Part III: Derivation of a Statistical Scheme for Cumulus Clouds. *Boundary-Layer Meteorology*, **2013**, 147, 421-441 | 3.4 | 26 |
| 34 | Deep Convection Triggering by Boundary Layer Thermals. Part II: Stochastic Triggering Parameterization for the LMDZ GCM. *Journals of the Atmospheric Sciences*, **2014**, 71, 515-538 | 2.1 | 25 |
| 33 | A short review of numerical cloud-resolving models. *Tellus, Series A: Dynamic Meteorology and Oceanography*, **2017**, 69, 1373578 | 2 | 22 |
| 32 | Detection of Intraseasonal Large-Scale Heat Waves: Characteristics and Historical Trends during the Sahelian Spring. *Journal of Climate*, **2018**, 31, 61-80 | 4.4 | 22 |
| 31 | Sampling the Structure of Convective Turbulence and Implications for Grey-Zone Parametrizations. *Boundary-Layer Meteorology*, **2016**, 160, 133-156 | 3.4 | 20 |
| 30 | Representation of daytime moist convection over the semi-arid Tropics by parametrizations used in climate and meteorological models. *Quarterly Journal of the Royal Meteorological Society*, **2015**, 141, 2220-2236 | 6.4 | 20 |
| 29 | Internal processes within the African Easterly Wave system. *Quarterly Journal of the Royal Meteorological Society*, **2015**, 141, 1121-1136 | 6.4 | 20 |
| 28 | Phenomenology of Sahelian convection observed in Niamey during the early monsoon. *Quarterly Journal of the Royal Meteorological Society*, **2014**, 140, 500-516 | 6.4 | 20 |
| 27 | Impact of coherent eddies on airborne measurements of vertical turbulent fluxes. *Boundary-Layer Meteorology*, **2007**, 124, 425-447 | 3.4 | 20 |
| 26 | Evaluation of Statistical Distributions for the Parametrization of Subgrid Boundary-Layer Clouds. *Boundary-Layer Meteorology*, **2011**, 140, 263-294 | 3.4 | 19 |
| 25 | Object-Oriented Identification of Coherent Structures in Large Eddy Simulations: Importance of Downdrafts in Stratocumulus. *Geophysical Research Letters*, **2019**, 46, 2854-2864 | 4.9 | 15 |
| 24 | Unified Parameterization of Convective Boundary Layer Transport and Clouds With the Thermal Plume Model. *Journal of Advances in Modeling Earth Systems*, **2019**, 11, 2910-2933 | 7.1 | 15 |
| 23 | Morphology of breeze circulations induced by surface flux heterogeneities and their impact on convection initiation. *Quarterly Journal of the Royal Meteorological Society*, **2017**, 143, 463-478 | 6.4 | 15 |
| 22 | The BLLAST field experiment: Boundary-Layer Late Afternoon and Sunset Turbulence | | 15 |

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| 21 | Nature of the Mesoscale Boundary Layer Height and Water Vapor Variability Observed 14 June 2002 during the IHOP_2002 Campaign. *Monthly Weather Review*, **2009**, 137, 414-432 | 2.4 | 13 |
| 20 | A Path-Tracing Monte Carlo Library for 3-D Radiative Transfer in Highly Resolved Cloudy Atmospheres. *Journal of Advances in Modeling Earth Systems*, **2019**, 11, 2449-2473 | 7.1 | 12 |
| 19 | Modelling of the Thermodynamical Diurnal Cycle in the Lower Atmosphere: A Joint Evaluation of Four Contrasted Regimes in the Tropics Over Land. *Boundary-Layer Meteorology*, **2014**, 150, 185-214 | 3.4 | 12 |
| 18 | Observations and Large-Eddy Simulations of Entrainment in the Sheared Sahelian Boundary Layer. *Boundary-Layer Meteorology*, **2012**, 142, 79-101 | 3.4 | 11 |
| 17 | Intercomparison of Large-Eddy Simulations of the Antarctic Boundary Layer for Very Stable Stratification. *Boundary-Layer Meteorology*, **2020**, 176, 369-400 | 3.4 | 10 |
| 16 | Process-Based Climate Model Development Harnessing Machine Learning: I. A Calibration Tool for Parameterization Improvement. *Journal of Advances in Modeling Earth Systems*, **2021**, 13, e2020MS002217 | 7.1 | 10 |
| 15 | Evaluation of a Buoyancy and Shear Based Mixing Length for a Turbulence Scheme. *Frontiers in Earth Science*, **2017**, 5, | 3.5 | 9 |
| 14 | The April 2010 North African heatwave: when the water vapor greenhouse effect drives nighttime temperatures. *Climate Dynamics*, **2020**, 54, 3879-3905 | 4.2 | 7 |
| 13 | Process-Based Climate Model Development Harnessing Machine Learning: II. Model Calibration From Single Column to Global. *Journal of Advances in Modeling Earth Systems*, **2021**, 13, e2020MS002225 | 7.1 | 6 |
| 12 | Accounting for Vertical Subgrid-Scale Heterogeneity in Low-Level Cloud Fraction Parameterizations. *Journal of Advances in Modeling Earth Systems*, **2018**, 10, 2686-2705 | 7.1 | 6 |
| 11 | LES study of the impact of moist thermals on the oxidative capacity of the atmosphere in southern West Africa. *Atmospheric Chemistry and Physics*, **2018**, 18, 6601-6624 | 6.8 | 4 |
| 10 | La campagne IHOP 2002 - Une campagne de mesure de la vapeur d'eau dans la couche limite. *La Météorologie*, **2003**, 8, 38 | 2.5 | 2 |
| 9 | A new downscaling method for sub-grid turbulence modeling. *Atmospheric Chemistry and Physics*, **2017**, 17, 6531-6546 | 6.8 | 1 |
| 8 | Atmospheric transport and chemistry of trace gases in LMDz5B: evaluation and implications for inverse modelling **2014**, | | 1 |
| 7 | A case-study of the coupled ocean–atmosphere response to an oceanic diurnal warm layer. *Quarterly Journal of the Royal Meteorological Society*, **2021**, 147, 2008-2032 | 6.4 | 1 |
| 6 | Process-Based Climate Model Development Harnessing Machine Learning: III. The Representation of Cumulus Geometry and Their 3D Radiative Effects. *Journal of Advances in Modeling Earth Systems*, **2021**, 13, e2020MS002423 | 7.1 | 1 |
| 5 | Sahelian Heat Wave Characterization From Observational Data Sets. *Journal of Geophysical Research D: Atmospheres*, **2021**, 126, e2020JD034465 | 4.4 | 1 |
| 4 | EUREC4A | | 1 |

# List of Publications

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| 3 | Use of large-eddy simulations to design an adaptive sampling strategy to assess cumulus cloud heterogeneities by remotely piloted aircraft. *Atmospheric Measurement Techniques*, **2022**, 15, 335-352 | 4 | 0 |
| 2 | Uncertainty of SW Cloud Radiative Effect in Atmospheric Models Due to the Parameterization of Liquid Cloud Optical Properties. *Journal of Advances in Modeling Earth Systems*, **2021**, 13, e2021MS002742 | 7.1 | 0 |
| 1 | Modeling the GABLS4 Strongly-Stable Boundary Layer With a GCM Turbulence Parameterization: Parametric Sensitivity or Intrinsic Limits?. *Journal of Advances in Modeling Earth Systems*, **2021**, 13, e2020MS002269 | 7.1 | 0 |