

Gianpaolo Balsamo

List of Publications by Year in Descending Order

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The third column is the impact factor (IF) of the journal, and the fourth column is the number of citations of the article.

126
papers

29,533
citations

52
h-index

171
g-index

173
ext. papers

35,927
ext. citations

5.2
avg, IF

6.33
L-index

#	Paper	IF	Citations
126	Global nature run data with realistic high-resolution carbon weather for the year of the Paris Agreement.. <i>Scientific Data</i> , 2022 , 9, 160	8.2	1
125	Quantification of methane emissions from hotspots and during COVID-19 using a global atmospheric inversion. <i>Atmospheric Chemistry and Physics</i> , 2022 , 22, 5961-5981	6.8	1
124	Global anthropogenic CO ₂ emissions and uncertainties as a prior for Earth system modelling and data assimilation. <i>Earth System Science Data</i> , 2021 , 13, 5311-5335	10.5	3
123	Land-Atmosphere Interactions Exacerbated the Drought and Heatwave Over Northern Europe During Summer 2018. <i>AGU Advances</i> , 2021 , 2, e2020AV000283	5.4	16
122	Systematic detection of local CH ₄ anomalies by combining satellite measurements with high-resolution forecasts. <i>Atmospheric Chemistry and Physics</i> , 2021 , 21, 5117-5136	6.8	10
121	ECLand: The ECMWF Land Surface Modelling System. <i>Atmosphere</i> , 2021 , 12, 723	2.7	5
120	An Urban Scheme for the ECMWF Integrated Forecasting System: Single-Column and Global Offline Application. <i>Journal of Advances in Modeling Earth Systems</i> , 2021 , 13, e2020MS002375	7.1	5
119	Impact of Initialized Land Surface Temperature and Snowpack on Subseasonal to Seasonal Prediction Project, Phase I (LS4P-I): organization and experimental design. <i>Geoscientific Model Development</i> , 2021 , 14, 4465-4494	6.3	4
118	Evaluation of 18 satellite- and model-based soil moisture products using in situ measurements from 826 sensors. <i>Hydrology and Earth System Sciences</i> , 2021 , 25, 17-40	5.5	61
117	Capability of the variogram to quantify the spatial patterns of surface fluxes and soil moisture simulated by land surface models. <i>Progress in Physical Geography</i> , 2021 , 45, 279-293	3.5	1
116	Upgrading Land-Cover and Vegetation Seasonality in the ECMWF Coupled System: Verification With FLUXNET Sites, METEOSAT Satellite Land Surface Temperatures, and ERA5 Atmospheric Reanalysis. <i>Journal of Geophysical Research D: Atmospheres</i> , 2021 , 126, e2020JD034163	4.4	5
115	ERA5-Land: a state-of-the-art global reanalysis dataset for land applications. <i>Earth System Science Data</i> , 2021 , 13, 4349-4383	10.5	138
114	The CO ₂ Human Emissions (CHE) Project: First Steps Towards a European Operational Capacity to Monitor Anthropogenic CO ₂ Emissions. <i>Frontiers in Remote Sensing</i> , 2021 , 2,	1	4
113	The ERA5 global reanalysis. <i>Quarterly Journal of the Royal Meteorological Society</i> , 2020 , 146, 1999-2049	6.4	3404
112	Environmental Lapse Rate for High-Resolution Land Surface Downscaling: An Application to ERA5. <i>Earth and Space Science</i> , 2020 , 7, e2019EA000984	3.1	15
111	Interactions Between the Amazonian Rainforest and Cumuli Clouds: A Large-Eddy Simulation, High-Resolution ECMWF, and Observational Intercomparison Study. <i>Journal of Advances in Modeling Earth Systems</i> , 2020 , 12, e2019MS001828	7.1	1
110	Toward an Operational Anthropogenic CO ₂ Emissions Monitoring and Verification Support Capacity. <i>Bulletin of the American Meteorological Society</i> , 2020 , 101, E1439-E1451	6.1	29

109	Energy, environment and sustainable development of the belt and road initiative: The Chinese scenario and Western contributions. <i>Sustainable Futures</i> , 2020 , 2, 100009	2.9	17
108	Representing model uncertainty for global atmospheric CO ₂ flux inversions using ECMWF-IFS-46R1. <i>Geoscientific Model Development</i> , 2020 , 13, 2297-2313	6.3	11
107	Sensitivity of snow models to the accuracy of meteorological forcings in mountain environments. <i>Hydrology and Earth System Sciences</i> , 2020 , 24, 4061-4090	5.5	9
106	Data assimilation for continuous global assessment of severe conditions over terrestrial surfaces. <i>Hydrology and Earth System Sciences</i> , 2020 , 24, 4291-4316	5.5	11
105	Measuring the Impact of a New Snow Model Using Surface Energy Budget Process Relationships. <i>Journal of Advances in Modeling Earth Systems</i> , 2020 , 12, e2020MS002144	7.1	3
104	Sensitivity of Surface Fluxes in the ECMWF Land Surface Model to the Remotely Sensed Leaf Area Index and Root Distribution: Evaluation with Tower Flux Data. <i>Atmosphere</i> , 2020 , 11, 1362	2.7	4
103	Upgraded global mapping information for earth system modelling: an application to surface water depth at the ECMWF. <i>Hydrology and Earth System Sciences</i> , 2019 , 23, 4051-4076	5.5	9
102	Towards operational predictions of the near-term climate. <i>Nature Climate Change</i> , 2019 , 9, 94-101	21.4	63
101	Monitoring and Forecasting the Impact of the 2018 Summer Heatwave on Vegetation. <i>Remote Sensing</i> , 2019 , 11, 520	5	27
100	SEAS5: the new ECMWF seasonal forecast system. <i>Geoscientific Model Development</i> , 2019 , 12, 1087-1117	6.3	152
99	Infiltration from the Pedon to Global Grid Scales: An Overview and Outlook for Land Surface Modeling. <i>Vadose Zone Journal</i> , 2019 , 18, 1-53	2.7	36
98	Spectral Empirical Orthogonal Function Analysis of Weather and Climate Data. <i>Monthly Weather Review</i> , 2019 , 147, 2979-2995	2.4	7
97	Evaluation of snow depth and snow cover over the Tibetan Plateau in global reanalyses using in situ and satellite remote sensing observations. <i>Cryosphere</i> , 2019 , 13, 2221-2239	5.5	61
96	Impact of a Multi-Layer Snow Scheme on Near-Surface Weather Forecasts. <i>Journal of Advances in Modeling Earth Systems</i> , 2019 , 11, 4687-4710	7.1	12
95	Land Surface Processes Relevant to Sub-seasonal to Seasonal (S2S) Prediction 2019 , 165-181		9
94	Verification of land-atmosphere coupling in forecast models, reanalyses and land surface models using flux site observations. <i>Journal of Hydrometeorology</i> , 2018 , 19, 375-392	3.7	46
93	ERA-5 and ERA-Interim driven ISBA land surface model simulations: which one performs better?. <i>Hydrology and Earth System Sciences</i> , 2018 , 22, 3515-3532	5.5	156
92	Toward a Surface Soil Moisture Product at High Spatiotemporal Resolution: Temporally Interpolated, Spatially Disaggregated SMOS Data. <i>Journal of Hydrometeorology</i> , 2018 , 19, 183-200	3.7	19

91	The Numerics of Physical Parametrization in the ECMWF Model. <i>Frontiers in Earth Science</i> , 2018 , 6,	3.5	17
90	SEAS5: The new ECMWF seasonal forecast system 2018 ,		2
89	ESM-SnowMIP: assessing snow models and quantifying snow-related climate feedbacks. <i>Geoscientific Model Development</i> , 2018 , 11, 5027-5049	6.3	62
88	Satellite and In Situ Observations for Advancing Global Earth Surface Modelling: A Review. <i>Remote Sensing</i> , 2018 , 10, 2038	5	60
87	ESM-SnowMIP: Assessing models and quantifying snow-related climate feedbacks 2018 ,		3
86	Modeling Surface Runoff and Water Fluxes over Contrasted Soils in the Pastoral Sahel: Evaluation of the ALMIP2 Land Surface Models over the Gourma Region in Mali. <i>Journal of Hydrometeorology</i> , 2017 , 18, 1847-1866	3.7	13
85	Streamflows over a West African Basin from the ALMIP2 Model Ensemble. <i>Journal of Hydrometeorology</i> , 2017 , 18, 1831-1845	3.7	11
84	On the numerical stability of surface-atmosphere coupling in weather and climate models. <i>Geoscientific Model Development</i> , 2017 , 10, 977-989	6.3	17
83	ESA CCI Soil Moisture for improved Earth system understanding: State-of-the art and future directions. <i>Remote Sensing of Environment</i> , 2017 , 203, 185-215	13.2	488
82	Multi-scale enhancement of climate prediction over land by increasing the model sensitivity to vegetation variability in EC-Earth. <i>Climate Dynamics</i> , 2017 , 49, 1215-1237	4.2	13
81	Stochastic representations of model uncertainties at ECMWF: state of the art and future vision. <i>Quarterly Journal of the Royal Meteorological Society</i> , 2017 , 143, 2315-2339	6.4	123
80	Precipitation over Monsoon Asia: A Comparison of Reanalyses and Observations. <i>Journal of Climate</i> , 2017 , 30, 465-476	4.4	36
79	Advancing land surface model development with satellite-based Earth observations. <i>Hydrology and Earth System Sciences</i> , 2017 , 21, 2483-2495	5.5	26
78	A global water resources ensemble of hydrological models: the earth2Observe Tier-1 dataset. <i>Earth System Science Data</i> , 2017 , 9, 389-413	10.5	116
77	Building a Multimodel Flood Prediction System with the TIGGE Archive. <i>Journal of Hydrometeorology</i> , 2016 , 17, 2923-2940	3.7	18
76	A biogenic CO ₂ flux adjustment scheme for the mitigation of large-scale biases in global atmospheric CO ₂ analyses and forecasts. <i>Atmospheric Chemistry and Physics</i> , 2016 , 16, 10399-10418	6.8	18
75	Influence of the Eurasian snow on the negative North Atlantic Oscillation in subseasonal forecasts of the cold winter 2009/2010. <i>Climate Dynamics</i> , 2016 , 47, 1325-1334	4.2	41
74	The plumbing of land surface models: is poor performance a result of methodology or data quality?. <i>Journal of Hydrometeorology</i> , 2016 , 17, 1705-1723	3.7	33

73	Impact of springtime Himalayan-Tibetan Plateau snowpack on the onset of the Indian summer monsoon in coupled seasonal forecasts. <i>Climate Dynamics</i> , 2016 , 47, 2709-2725	4.2	36
72	Confronting weather and climate models with observational data from soil moisture networks over the United States. <i>Journal of Hydrometeorology</i> , 2016 , 17, 1049-1067	3.7	60
71	The Plumbing of Land Surface Models: Benchmarking Model Performance. <i>Journal of Hydrometeorology</i> , 2015 , 16, 1425-1442	3.7	150
70	Assimilation of surface albedo and vegetation states from satellite observations and their impact on numerical weather prediction. <i>Remote Sensing of Environment</i> , 2015 , 163, 111-126	13.2	41
69	Comparison of model land skin temperature with remotely sensed estimates and assessment of surface-atmosphere coupling. <i>Journal of Geophysical Research D: Atmospheres</i> , 2015 , 120, 12,096	4.4	57
68	Soil temperature at ECMWF: An assessment using ground-based observations. <i>Journal of Geophysical Research D: Atmospheres</i> , 2015 , 120, 1361-1373	4.4	25
67	ERA-Interim/Land: a global land surface reanalysis data set. <i>Hydrology and Earth System Sciences</i> , 2015 , 19, 389-407	5.5	379
66	The WFDEI meteorological forcing data set: WATCH Forcing Data methodology applied to ERA-Interim reanalysis data. <i>Water Resources Research</i> , 2014 , 50, 7505-7514	5.4	660
65	Initialisation of Land Surface Variables for Numerical Weather Prediction. <i>Surveys in Geophysics</i> , 2014 , 35, 607-621	7.6	100
64	Forecasting global atmospheric CO ₂ . <i>Atmospheric Chemistry and Physics</i> , 2014 , 14, 11959-11983	6.8	49
63	Current systematic carbon-cycle observations and the need for implementing a policy-relevant carbon observing system. <i>Biogeosciences</i> , 2014 , 11, 3547-3602	4.6	136
62	Evaluating the potential of large-scale simulations to predict carbon fluxes of terrestrial ecosystems over a European Eddy Covariance network. <i>Biogeosciences</i> , 2014 , 11, 2661-2678	4.6	22
61	Water Balance in the Amazon Basin from a Land Surface Model Ensemble. <i>Journal of Hydrometeorology</i> , 2014 , 15, 2586-2614	3.7	54
60	Toward a Consistent Reanalysis of the Climate System. <i>Bulletin of the American Meteorological Society</i> , 2014 , 95, 1235-1248	6.1	153
59	The 2010-2011 drought in the Horn of Africa in ECMWF reanalysis and seasonal forecast products. <i>International Journal of Climatology</i> , 2013 , 33, 1720-1729	3.5	97
58	Monitoring multi-decadal satellite earth observation of soil moisture products through land surface reanalyses. <i>Remote Sensing of Environment</i> , 2013 , 138, 77-89	13.2	68
57	Impact of snow initialization on sub-seasonal forecasts. <i>Climate Dynamics</i> , 2013 , 41, 1969-1982	4.2	63
56	Skill and Global Trend Analysis of Soil Moisture from Reanalyses and Microwave Remote Sensing. <i>Journal of Hydrometeorology</i> , 2013 , 14, 1259-1277	3.7	162

55	Natural land carbon dioxide exchanges in the ECMWF integrated forecasting system: Implementation and offline validation. <i>Journal of Geophysical Research D: Atmospheres</i> , 2013 , 118, 5923-5946	4.4	88
54	A simplified Extended Kalman Filter for the global operational soil moisture analysis at ECMWF. <i>Quarterly Journal of the Royal Meteorological Society</i> , 2013 , 139, 1199-1213	6.4	188
53	Representing Land Surface Heterogeneity: Offline Analysis of the Tiling Method. <i>Journal of Hydrometeorology</i> , 2013 , 14, 850-867	3.7	9
52	Impact of a satellite-derived leaf area index monthly climatology in a global numerical weather prediction model. <i>International Journal of Remote Sensing</i> , 2013 , 34, 3520-3542	3.1	80
51	Why is it so difficult to represent stably stratified conditions in numerical weather prediction (NWP) models?. <i>Journal of Advances in Modeling Earth Systems</i> , 2013 , 5, 117-133	7.1	140
50	The Concordiasi Field Experiment over Antarctica: First Results from Innovative Atmospheric Measurements. <i>Bulletin of the American Meteorological Society</i> , 2013 , 94, ES17-ES20	6.1	14
49	Soil moisture effects on seasonal temperature and precipitation forecast scores in Europe. <i>Climate Dynamics</i> , 2012 , 38, 349-362	4.2	91
48	A bare ground evaporation revision in the ECMWF land-surface scheme: evaluation of its impact using ground soil moisture and satellite microwave data. <i>Hydrology and Earth System Sciences</i> , 2012 , 16, 3607-3620	5.5	42
47	On the contribution of lakes in predicting near-surface temperature in a global weather forecasting model. <i>Tellus, Series A: Dynamic Meteorology and Oceanography</i> , 2012 , 64, 15829	2	74
46	Complexity of Snow Schemes in a Climate Model and Its Impact on Surface Energy and Hydrology. <i>Journal of Hydrometeorology</i> , 2012 , 13, 521-538	3.7	50
45	Soil Moisture Analyses at ECMWF: Evaluation Using Global Ground-Based In Situ Observations. <i>Journal of Hydrometeorology</i> , 2012 , 13, 1442-1460	3.7	101
44	Initialisation of Land Surface Variables for Numerical Weather Prediction. <i>Space Sciences Series of ISSI</i> , 2012 , 607-621	0.1	
43	Land water storage variability over West Africa estimated by Gravity Recovery and Climate Experiment (GRACE) and land surface models. <i>Water Resources Research</i> , 2011 , 47,	5.4	67
42	Evaluation of global observations-based evapotranspiration datasets and IPCC AR4 simulations. <i>Geophysical Research Letters</i> , 2011 , 38, n/a-n/a	4.9	267
41	Global intercomparison of 12 land surface heat flux estimates. <i>Journal of Geophysical Research</i> , 2011 , 116,		271
40	Snow cover sensitivity to horizontal resolution, parameterizations, and atmospheric forcing in a land surface model. <i>Journal of Geophysical Research</i> , 2011 , 116,		35
39	Verification of the new ECMWF ERA-Interim reanalysis over France. <i>Hydrology and Earth System Sciences</i> , 2011 , 15, 647-666	5.5	91
38	The ERA-Interim reanalysis: configuration and performance of the data assimilation system. <i>Quarterly Journal of the Royal Meteorological Society</i> , 2011 , 137, 553-597	6.4	17277

37	A revised land hydrology in the ECMWF model: a step towards daily water flux prediction in a fully-closed water cycle. <i>Hydrological Processes</i> , 2011 , 25, 1046-1054	3.3	60
36	Sensitivity of L-band NWP forward modelling to soil roughness. <i>International Journal of Remote Sensing</i> , 2011 , 32, 5607-5620	3.1	25
35	The Second Phase of the Global LandAtmosphere Coupling Experiment: Soil Moisture Contributions to Subseasonal Forecast Skill. <i>Journal of Hydrometeorology</i> , 2011 , 12, 805-822	3.7	242
34	Cross-evaluation of modelled and remotely sensed surface soil moisture with in situ data in southwestern France. <i>Hydrology and Earth System Sciences</i> , 2010 , 14, 2177-2191	5.5	79
33	The Concordiasi Project in Antarctica. <i>Bulletin of the American Meteorological Society</i> , 2010 , 91, 69-86	6.1	65
32	An Intercomparison of Simulated Rainfall and Evapotranspiration Associated with a Mesoscale Convective System over West Africa. <i>Weather and Forecasting</i> , 2010 , 25, 37-60	2.1	19
31	Contribution of land surface initialization to subseasonal forecast skill: First results from a multi-model experiment. <i>Geophysical Research Letters</i> , 2010 , 37, n/a-n/a	4.9	280
30	Impact of improved soil moisture on the ECMWF precipitation forecast in West Africa. <i>Geophysical Research Letters</i> , 2010 , 37, n/a-n/a	4.9	26
29	An Improved Snow Scheme for the ECMWF Land Surface Model: Description and Offline Validation. <i>Journal of Hydrometeorology</i> , 2010 , 11, 899-916	3.7	191
28	Global runoff routing with the hydrological component of the ECMWF NWP system. <i>International Journal of Climatology</i> , 2010 , 30, 2155-2174	3.5	40
27	The ECMWF model climate: recent progress through improved physical parametrizations. <i>Quarterly Journal of the Royal Meteorological Society</i> , 2010 , 136, 1145-1160	6.4	70
26	The ECMWF re-analysis for the AMMA observational campaign. <i>Quarterly Journal of the Royal Meteorological Society</i> , 2010 , 136, 1457-1472	6.4	40
25	A Revised Hydrology for the ECMWF Model: Verification from Field Site to Terrestrial Water Storage and Impact in the Integrated Forecast System. <i>Journal of Hydrometeorology</i> , 2009 , 10, 623-643	3.7	557
24	Comparing ERA-40-Based L-Band Brightness Temperatures with Skylab Observations: A Calibration/Validation Study Using the Community Microwave Emission Model. <i>Journal of Hydrometeorology</i> , 2009 , 10, 213-226	3.7	52
23	The AMMA Land Surface Model Intercomparison Project (ALMIP). <i>Bulletin of the American Meteorological Society</i> , 2009 , 90, 1865-1880	6.1	149
22	Towards a Kalman Filter based soil moisture analysis system for the operational ECMWF Integrated Forecast System. <i>Geophysical Research Letters</i> , 2009 , 36,	4.9	68
21	AMMA Land Surface Model Intercomparison Experiment coupled to the Community Microwave Emission Model: ALMIP-MEM. <i>Journal of Geophysical Research</i> , 2009 , 114,		92
20	Analysis of leaf area index in the ECMWF land surface model and impact on latent heat and carbon fluxes: Application to West Africa. <i>Journal of Geophysical Research</i> , 2008 , 113,		57

19	Advances in simulating atmospheric variability with the ECMWF model: From synoptic to decadal time-scales. <i>Quarterly Journal of the Royal Meteorological Society</i> , 2008 , 134, 1337-1351	6.4	407
18	The new VarEPS-monthly forecasting system: A first step towards seamless prediction. <i>Quarterly Journal of the Royal Meteorological Society</i> , 2008 , 134, 1789-1799	6.4	109
17	Evaluation of European Land Data Assimilation System (ELDAS) products using in situ observations. <i>Tellus, Series A: Dynamic Meteorology and Oceanography</i> , 2008 , 60, 1023-1037	2	14
16	A Land Data Assimilation System for Soil Moisture and Temperature: An Information Content Study. <i>Journal of Hydrometeorology</i> , 2007 , 8, 1225-1242	3.7	65
15	A Global Root-Zone Soil Moisture Analysis Using Simulated L-band Brightness Temperature in Preparation for the Hydros Satellite Mission. <i>Journal of Hydrometeorology</i> , 2006 , 7, 1126-1146	3.7	27
14	A simplified bi-dimensional variational analysis of soil moisture from screen-level observations in a mesoscale numerical weather-prediction model. <i>Quarterly Journal of the Royal Meteorological Society</i> , 2004 , 130, 895-915	6.4	41
13	Impact of soil surface moisture initialization on rainfall in a limited area model: a case study of the 1995 South Ticino flash flood. <i>Hydrological Processes</i> , 2002 , 16, 1301-1317	3.3	13
12	Towards the inclusion of hydros soil moisture measurements in forecasting systems of the meteorological service of Canada		1
11	Forecasting global atmospheric CO ₂		2
10	Current systematic carbon cycle observations and needs for implementing a policy-relevant carbon observing system		10
9	Evaluating the potential of large scale simulations to predict carbon fluxes of terrestrial ecosystems over a European Eddy Covariance network		2
8	A global water resources ensemble of hydrological models: the earthH2Observe Tier-1 dataset		2
7	Global anthropogenic CO ₂ emissions and uncertainties as prior for Earth system modelling and data assimilation		4
6	Evaluation of 18 satellite- and model-based soil moisture products using in situ measurements from 826 sensors		4
5	ERA-Interim/Land: a global land water resources dataset		36
4	Cross-evaluation of modelled and remotely sensed surface soil moisture with in situ data in Southwestern France		1
3	A bare ground evaporation revision in the ECMWF land-surface scheme: evaluation of its impact using ground soil moisture and satellite microwave data		4
2	Varying snow and vegetation signatures of surface albedo feedback on the Northern Hemisphere land warming. <i>Environmental Research Letters</i> ,	6.2	2

1 ERA5-Land: A state-of-the-art global reanalysis dataset for land applications