Gianpaolo Balsamo

List of Publications by Year
in descending order

116 papers	43,269 citations	28190 55 h-index	22764 112 g-index
175 all docs	175 docs citations	175 times ranked	30104 citing authors

#	Article	IF	Citations
1	The ERAâ€Interim reanalysis: configuration and performance of the data assimilation system. Quarterly Journal of the Royal Meteorological Society, 2011, 137, 553-597.	1.0	20,227
2	The ERA5 global reanalysis. Quarterly Journal of the Royal Meteorological Society, 2020, 146, 1999-2049.	1.0	10,272
3	ERA5-Land: a state-of-the-art global reanalysis dataset for land applications. Earth System Science Data, 2021, 13, 4349-4383.	3.7	1,083
4	The WFDEI meteorological forcing data set: WATCH Forcing Data methodology applied to ERAâ€Interim reanalysis data. Water Resources Research, 2014, 50, 7505-7514.	1.7	816
5	ESA CCI Soil Moisture for improved Earth system understanding: State-of-the art and future directions. Remote Sensing of Environment, 2017, 203, 185-215.	4.6	781
6	A Revised Hydrology for the ECMWF Model: Verification from Field Site to Terrestrial Water Storage and Impact in the Integrated Forecast System. Journal of Hydrometeorology, 2009, 10, 623-643.	0.7	695
7	Advances in simulating atmospheric variability with the ECMWF model: From synoptic to decadal timeâ€scales. Quarterly Journal of the Royal Meteorological Society, 2008, 134, 1337-1351.	1.0	497
8	ERA-Interim/Land: a global land surface reanalysis data set. Hydrology and Earth System Sciences, 2015, 19, 389-407.	1.9	483
9	SEAS5: the new ECMWF seasonal forecast system. Geoscientific Model Development, 2019, 12, 1087-1117.	1.3	331
10	Contribution of land surface initialization to subseasonal forecast skill: First results from a multiâ€model experiment. Geophysical Research Letters, 2010, 37, .	1.5	330
11	Evaluation of global observations-based evapotranspiration datasets and IPCC AR4 simulations. Geophysical Research Letters, 2011, 38, n/a-n/a.	1.5	312
12	Global intercomparison of 12 land surface heat flux estimates. Journal of Geophysical Research, 2011, 116, .	3.3	309
13	The Second Phase of the Global Landâ€“Atmosphere Coupling Experiment: Soil Moisture Contributions to Subseasonal Forecast Skill. Journal of Hydrometeorology, 2011, 12, 805-822.	0.7	296
14	ERA-5 and ERA-Interim driven ISBA land surface model simulations: which one performs better?. Hydrology and Earth System Sciences, 2018, 22, 3515-3532.	1.9	243
15	A simplified Extended Kalman Filter for the global operational soil moisture analysis at ECMWF. Quarterly Journal of the Royal Meteorological Society, 2013, 139, 1199-1213.	1.0	223
16	An Improved Snow Scheme for the ECMWF Land Surface Model: Description and Offline Validation. Journal of Hydrometeorology, 2010, 11, 899-916.	0.7	221
17	Skill and Global Trend Analysis of Soil Moisture from Reanalyses and Microwave Remote Sensing. Journal of Hydrometeorology, 2013, 14, 1259-1277.	0.7	205
18	The Plumbing of Land Surface Models: Benchmarking Model Performance. Journal of Hydrometeorology, 2015, 16, 1425-1442.	0.7	191

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19	Current systematic carbon-cycle observations and the need for implementing a policy-relevant carbon observing system. Biogeosciences, 2014, 11, 3547-3602.	1.3	189
20	Toward a Consistent Reanalysis of the Climate System. Bulletin of the American Meteorological Society, 2014, 95, 1235-1248.	1.7	184
21	Why is it so difficult to represent stably stratified conditions in numerical weather prediction (NWP) models?. Journal of Advances in Modeling Earth Systems, 2013, 5, 117-133.	1.3	182
22	Stochastic representations of model uncertainties at ECMWF: state of the art and future vision. Quarterly Journal of the Royal Meteorological Society, 2017, 143, 2315-2339.	1.0	170
23	A global water resources ensemble of hydrological models: the eartH2Observe Tier-1 dataset. Earth System Science Data, 2017, 9, 389-413.	3.7	169
24	The AMMA Land Surface Model Intercomparison Project (ALMIP). Bulletin of the American Meteorological Society, 2009, 90, 1865-1880.	1.7	165
25	Evaluation of 18 satellite- and model-based soil moisture products using in situ measurements from 826 sensors. Hydrology and Earth System Sciences, 2021, 25, 17-40.	1.9	156
26	Evaluation of snow depth and snow cover over the Tibetan Plateau in global reanalyses using in situ and satellite remote sensing observations. Cryosphere, 2019, 13, 2221-2239.	1.5	144
27	Initialisation of Land Surface Variables for Numerical Weather Prediction. Surveys in Geophysics, 2014, 35, 607-621.	2.1	135
28	The new VarEPSâ€monthly forecasting system: A first step towards seamless prediction. Quarterly Journal of the Royal Meteorological Society, 2008, 134, 1789-1799.	1.0	129
29	Soil Moisture Analyses at ECMWF: Evaluation Using Global Ground-Based In Situ Observations. Journal of Hydrometeorology, 2012, 13, 1442-1460.	0.7	119
30	The 2010â€“2011 drought in the Horn of Africa in ECMWF reanalysis and seasonal forecast products. International Journal of Climatology, 2013, 33, 1720-1729.	1.5	119
31	ESM-SnowMIP: assessing snow models and quantifying snow-related climate feedbacks. Geoscientific Model Development, 2018, 11, 5027-5049.	1.3	119
32	Towards operational predictions of the near-term climate. Nature Climate Change, 2019, 9, 94-101.	8.1	116
33	Natural land carbon dioxide exchanges in the ECMWF integrated forecasting system: Implementation and offline validation. Journal of Geophysical Research D: Atmospheres, 2013, 118, 5923-5946.	1.2	113
34	Soil moisture effects on seasonal temperature and precipitation forecast scores in Europe. Climate Dynamics, 2012, 38, 349-362.	1.7	108
35	Impact of a satellite-derived leaf area index monthly climatology in a global numerical weather prediction model. International Journal of Remote Sensing, 2013, 34, 3520-3542.	1.3	108
36	On the contribution of lakes in predicting near-surface temperature in a global weather forecasting model. Tellus, Series A: Dynamic Meteorology and Oceanography, 2022, 64, 15829.	0.8	103

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37	AMMA Land Surface Model Intercomparison Experiment coupled to the Community Microwave Emission Model: ALMIPâ€MEM. Journal of Geophysical Research, 2009, 114, .	3.3	102
38	Verification of the new ECMWF ERA-Interim reanalysis over France. Hydrology and Earth System Sciences, 2011, 15, 647-666.	1.9	100
39	Cross-evaluation of modelled and remotely sensed surface soil moisture with in situ data in southwestern France. Hydrology and Earth System Sciences, 2010, 14, 2177-2191.	1.9	95
40	Satellite and In Situ Observations for Advancing Global Earth Surface Modelling: A Review. Remote Sensing, 2018, 10, 2038.	1.8	95
41	Confronting Weather and Climate Models with Observational Data from Soil Moisture Networks over the United States. Journal of Hydrometeorology, 2016, 17, 1049-1067.	0.7	83
42	Analysis of leaf area index in the ECMWF land surface model and impact on latent heat and carbon fluxes: Application to West Africa. Journal of Geophysical Research, 2008, 113, .	3.3	80
43	Monitoring multi-decadal satellite earth observation of soil moisture products through land surface reanalyses. Remote Sensing of Environment, 2013, 138, 77-89.	4.6	79
44	The Concordiasi Project in Antarctica. Bulletin of the American Meteorological Society, 2010, 91, 69-86.	1.7	78
45	Towards a Kalman Filter based soil moisture analysis system for the operational ECMWF Integrated Forecast System. Geophysical Research Letters, 2009, 36, .	1.5	77
46	The ECMWF model climate: recent progress through improved physical parametrizations. Quarterly Journal of the Royal Meteorological Society, 2010, 136, 1145-1160.	1.0	77
47	A revised land hydrology in the ECMWF model: a step towards daily water flux prediction in a fullyâ€closed water cycle. Hydrological Processes, 2011, 25, 1046-1054.	1.1	77
48	Impact of snow initialization on sub-seasonal forecasts. Climate Dynamics, 2013, 41, 1969-1982.	1.7	77
49	Land water storage variability over West Africa estimated by Gravity Recovery and Climate Experiment (GRACE) and land surface models. Water Resources Research, 2011, 47, .	1.7	76
50	A Land Data Assimilation System for Soil Moisture and Temperature: An Information Content Study. Journal of Hydrometeorology, 2007, 8, 1225-1242.	0.7	74
51	Forecasting global atmospheric CO₂. Atmospheric Chemistry and Physics, 2014, 14, 11959-11983.	1.9	74
52	Comparison of model land skin temperature with remotely sensed estimates and assessment of surfaceâ€atmosphere coupling. Journal of Geophysical Research D: Atmospheres, 2015, 120, 12,096.	1.2	73
53	Water Balance in the Amazon Basin from a Land Surface Model Ensemble. Journal of Hydrometeorology, 2014, 15, 2586-2614.	0.7	66
54	Verification of Landâ€“Atmosphere Coupling in Forecast Models, Reanalyses, and Land Surface Models Using Flux Site Observations. Journal of Hydrometeorology, 2018, 19, 375-392.	0.7	66

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55	Landâ€Atmosphere Interactions Exacerbated the Drought and Heatwave Over Northern Europe During Summer 2018. AGU Advances, 2021, 2, e2020AV000283.	2.3	65
56	Toward an Operational Anthropogenic CO2 Emissions Monitoring and Verification Support Capacity. Bulletin of the American Meteorological Society, 2020, 101, E1439-E1451.	1.7	63
57	Comparing ERA-40-Based L-Band Brightness Temperatures with Skylab Observations: A Calibration/Validation Study Using the Community Microwave Emission Model. Journal of Hydrometeorology, 2009, 10, 213-226.	0.7	57
58	Complexity of Snow Schemes in a Climate Model and Its Impact on Surface Energy and Hydrology. Journal of Hydrometeorology, 2012, 13, 521-538.	0.7	57
59	Assimilation of surface albedo and vegetation states from satellite observations and their impact on numerical weather prediction. Remote Sensing of Environment, 2015, 163, 111-126.	4.6	57
60	Infiltration from the Pedon to Global Grid Scales: An Overview and Outlook for Land Surface Modeling. Vadose Zone Journal, 2019, 18, 1-53.	1.3	56
61	Impact of springtime Himalayanâ€“Tibetan Plateau snowpack on the onset of the Indian summer monsoon in coupled seasonal forecasts. Climate Dynamics, 2016, 47, 2709-2725.	1.7	53
62	A simplified bi-dimensional variational analysis of soil moisture from screen-level observations in a mesoscale numerical weather-prediction model. Quarterly Journal of the Royal Meteorological Society, 2004, 130, 895-915.	1.0	47
63	Global runoff routing with the hydrological component of the ECMWF NWP system. International Journal of Climatology, 2010, 30, 2155-2174.	1.5	47
64	A bare ground evaporation revision in the ECMWF land-surface scheme: evaluation of its impact using ground soil moisture and satellite microwave data. Hydrology and Earth System Sciences, 2012, 16, 3607-3620.	1.9	47
65	Influence of the Eurasian snow on the negative North Atlantic Oscillation in subseasonal forecasts of the cold winter 2009/2010. Climate Dynamics, 2016, 47, 1325-1334.	1.7	47
66	The Plumbing of Land Surface Models: Is Poor Performance a Result of Methodology or Data Quality?. Journal of Hydrometeorology, 2016, 17, 1705-1723.	0.7	43
67	Precipitation over Monsoon Asia: A Comparison of Reanalyses and Observations. Journal of Climate, 2017, 30, 465-476.	1.2	43
68	The ECMWF reâ€analysis for the AMMA observational campaign. Quarterly Journal of the Royal Meteorological Society, 2010, 136, 1457-1472.	1.0	42
69	Snow cover sensitivity to horizontal resolution, parameterizations, and atmospheric forcing in a land surface model. Journal of Geophysical Research, 2011, 116, .	3.3	41
70	Monitoring and Forecasting the Impact of the 2018 Summer Heatwave on Vegetation. Remote Sensing, 2019, 11, 520.	1.8	40
71	Advancing land surface model development with satellite-based Earth observations. Hydrology and Earth System Sciences, 2017, 21, 2483-2495.	1.9	39
72	Soil temperature at ECMWF: An assessment using groundâ€based observations. Journal of Geophysical Research D: Atmospheres, 2015, 120, 1361-1373.	1.2	33

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73	Impact of a Multiâ€Layer Snow Scheme on Nearâ€Surface Weather Forecasts. Journal of Advances in Modeling Earth Systems, 2019, 11, 4687-4710.	1.3	32
74	Environmental Lapse Rate for Highâ€Resolution Land Surface Downscaling: An Application to ERA5. Earth and Space Science, 2020, 7, e2019EA000984.	1.1	32
75	Impact of Initialized Land Surface Temperature and Snowpack on Subseasonal to Seasonal Prediction Project, Phase I (LS4P-I): organization and experimental design. Geoscientific Model Development, 2021, 14, 4465-4494.	1.3	31
76	Impact of improved soil moisture on the ECMWF precipitation forecast in West Africa. Geophysical Research Letters, 2010, 37, .	1.5	30
77	Evaluating the potential of large-scale simulations to predict carbon fluxes of terrestrial ecosystems over a European Eddy Covariance network. Biogeosciences, 2014, 11, 2661-2678.	1.3	30
78	Energy, environment and sustainable development of the belt and road initiative: The Chinese scenario and Western contributions. Sustainable Futures, 2020, 2, 100009.	1.5	30
79	A Global Root-Zone Soil Moisture Analysis Using Simulated L-band Brightness Temperature in Preparation for the Hydros Satellite Mission. Journal of Hydrometeorology, 2006, 7, 1126-1146.	0.7	29
80	The Numerics of Physical Parametrization in the ECMWF Model. Frontiers in Earth Science, 2018, 6, .	0.8	28
81	A biogenic CO₂ flux adjustment scheme for the mitigation of large-scale biases in global atmospheric CO₂ analyses and forecasts. Atmospheric Chemistry and Physics, 2016, 16, 10399-10418.	1.9	27
82	Sensitivity of snow models to the accuracy of meteorological forcings in mountain environments. Hydrology and Earth System Sciences, 2020, 24, 4061-4090.	1.9	27
83	Sensitivity of L-band NWP forward modelling to soil roughness. International Journal of Remote Sensing, 2011, 32, 5607-5620.	1.3	25
84	Systematic detection of local CH₄ anomalies by combining satellite measurements with high-resolution forecasts. Atmospheric Chemistry and Physics, 2021, 21, 5117-5136.	1.9	24
85	An Intercomparison of Simulated Rainfall and Evapotranspiration Associated with a Mesoscale Convective System over West Africa. Weather and Forecasting, 2010, 25, 37-60.	0.5	23
86	Building a Multimodel Flood Prediction System with the TIGGE Archive. Journal of Hydrometeorology, 2016, 17, 2923-2940.	0.7	23
87	ECLand: The ECMWF Land Surface Modelling System. Atmosphere, 2021, 12, 723.	1.0	23
88	The Concordiasi Field Experiment over Antarctica: First Results from Innovative Atmospheric Measurements. Bulletin of the American Meteorological Society, 2013, 94, ES17-ES20.	1.7	22
89	Toward a Surface Soil Moisture Product at High Spatiotemporal Resolution: Temporally Interpolated, Spatially Disaggregated SMOS Data. Journal of Hydrometeorology, 2018, 19, 183-200.	0.7	22
90	Multi-scale enhancement of climate prediction over land by increasing the model sensitivity to vegetation variability in EC-Earth. Climate Dynamics, 2017, 49, 1215-1237.	1.7	21

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91	On the numerical stability of surfaceâ€“atmosphere coupling in weather and climate models. Geoscientific Model Development, 2017, 10, 977-989.	1.3	21
92	Evaluation of European Land Data Assimilation System (ELDAS) products using in situ observations. Tellus, Series A: Dynamic Meteorology and Oceanography, 2022, 60, 1023.	0.8	19
93	Spectral Empirical Orthogonal Function Analysis of Weather and Climate Data. Monthly Weather Review, 2019, 147, 2979-2995.	0.5	18
94	Data assimilation for continuous global assessment of severe conditions over terrestrial surfaces. Hydrology and Earth System Sciences, 2020, 24, 4291-4316.	1.9	18
95	Upgrading Landâ€Cover and Vegetation Seasonality in the ECMWF Coupled System: Verification With FLUXNET Sites, METEOSAT Satellite Land Surface Temperatures, and ERA5 Atmospheric Reanalysis. Journal of Geophysical Research D: Atmospheres, 2021, 126, e2020JD034163.	1.2	17
96	Upgraded global mapping information for earth system modelling: an application to surface water depth at the ECMWF. Hydrology and Earth System Sciences, 2019, 23, 4051-4076.	1.9	16
97	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. Journal of Hydrometeorology, 2017, 18, 1847-1866.	0.7	15
98	Representing model uncertainty for global atmospheric CO₂ flux inversions using ECMWF-IFS-46R1. Geoscientific Model Development, 2020, 13, 2297-2313.	1.3	14
99	Impact of soil surface moisture initialization on rainfall in a limited area model: a case study of the 1995 South Ticino flash flood. Hydrological Processes, 2002, 16, 1301-1317.	1.1	13
100	Streamflows over a West African Basin from the ALMIP2 Model Ensemble. Journal of Hydrometeorology, 2017, 18, 1831-1845.	0.7	13
101	The CO2 Human Emissions (CHE) Project: First Steps Towards a European Operational Capacity to Monitor Anthropogenic CO2 Emissions. Frontiers in Remote Sensing, 2021, 2, .	1.3	13
102	Land Surface Processes Relevant to Sub-seasonal to Seasonal (S2S) Prediction. , 2019, , 165-181.		12
103	Representing Land Surface Heterogeneity: Offline Analysis of the Tiling Method. Journal of Hydrometeorology, 2013, 14, 850-867.	0.7	11
104	Quantification of methane emissions from hotspots and during COVID-19 using a global atmospheric inversion. Atmospheric Chemistry and Physics, 2022, 22, 5961-5981.	1.9	11
105	Interactions Between the Amazonian Rainforest andÂCumuli Clouds: A Largeâ€Eddy Simulation, Highâ€Resolution ECMWF, and Observational Intercomparison Study. Journal of Advances in Modeling Earth Systems, 2020, 12, e2019MS001828.	1.3	10
106	An Urban Scheme for the ECMWF Integrated Forecasting System: Singleâ€Column and Global Offline Application. Journal of Advances in Modeling Earth Systems, 2021, 13, e2020MS002375.	1.3	10
107	Varying snow and vegetation signatures of surface albedo feedback on the Northern Hemisphere land warming. Environmental Research Letters, 0, , .	2.2	9
108	On the Importance of Representing Snow Over Seaâ€Ice for Simulating the Arctic Boundary Layer. Journal of Advances in Modeling Earth Systems, 2022, 14, .	1.3	9

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109	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. Atmosphere, 2020, 11, 1362.	1.0	8
110	Measuring the Impact of a New Snow Model Using Surface Energy Budget Process Relationships. Journal of Advances in Modeling Earth Systems, 2020, 12, e2020MS002144.	1.3	8
111	Global anthropogenic CO₂ emissions and uncertainties as a prior for Earth system modelling and data assimilation. Earth System Science Data, 2021, 13, 5311-5335.	3.7	7
112	Global nature run data with realistic high-resolution carbon weather for the year of the Paris Agreement. Scientific Data, 2022, 9, 160.	2.4	3
113	Towards the inclusion of hydros soil moisture measurements in forecasting systems of the meteorological service of Canada. , 0, , .		1
114	Soil Moisture Remote Sensing for Numerical Weather Prediction: L-Band and C-Band Emission Modeling Over Land Surfaces, the Community Microwave Emission Model (CMEM). , 2008, , .		1
115	Capability of the variogram to quantify the spatial patterns of surface fluxes and soil moisture simulated by land surface models. Progress in Physical Geography, 2021, 45, 279-293.	1.4	1
116	Initialisation of Land Surface Variables for Numerical Weather Prediction. Space Sciences Series of ISSI, 2012, , 607-621.	0.0	0