

# Wolfgang Ludwig

## List of Publications by Year in descending order

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87  
papers

6,794  
citations

61984

43  
h-index

62596

80  
g-index

89  
all docs

89  
docs citations

89  
times ranked

7973  
citing authors

#	ARTICLE	IF	CITATIONS
1	Predicting the oceanic input of organic carbon by continental erosion. <i>Global Biogeochemical Cycles</i> , 1996, 10, 23-41.	4.9	763
2	River discharges of water and nutrients to the Mediterranean and Black Sea: Major drivers for ecosystem changes during past and future decades?. <i>Progress in Oceanography</i> , 2009, 80, 199-217.	3.2	595
3	Worldwide distribution of continental rock lithology: Implications for the atmospheric/soil CO <sub>2</sub> uptake by continental weathering and alkalinity river transport to the oceans. <i>Global Biogeochemical Cycles</i> , 2003, 17, n/a-n/a.	4.9	397
4	HyMeX: A 10-Year Multidisciplinary Program on the Mediterranean Water Cycle. <i>Bulletin of the American Meteorological Society</i> , 2014, 95, 1063-1082.	3.3	288
5	X-ray diffraction contrast tomography: a novel technique for three-dimensional grain mapping of polycrystals. I. Direct beam case. <i>Journal of Applied Crystallography</i> , 2008, 41, 302-309.	4.5	221
6	Advances in synchrotron radiation microtomography. <i>Scripta Materialia</i> , 2006, 55, 41-46.	5.2	166
7	3-D growth of a short fatigue crack within a polycrystalline microstructure studied using combined diffraction and phase-contrast X-ray tomography. <i>Acta Materialia</i> , 2011, 59, 590-601.	7.9	166
8	X-ray diffraction contrast tomography: a novel technique for three-dimensional grain mapping of polycrystals. II. The combined case. <i>Journal of Applied Crystallography</i> , 2008, 41, 310-318.	4.5	159
9	The missing ocean plastic sink: Gone with the rivers. <i>Science</i> , 2021, 373, 107-111.	12.6	146
10	Hard x-ray phase imaging using simple propagation of a coherent synchrotron radiation beam. <i>Journal Physics D: Applied Physics</i> , 1999, 32, A145-A151.	2.8	138
11	Three dimensional experimental and numerical multiscale analysis of a fatigue crack. <i>Computer Methods in Applied Mechanics and Engineering</i> , 2010, 199, 1307-1325.	6.6	132
12	Fatigue crack propagation: In situ visualization using X-ray microtomography and 3D simulation using the extended finite element method. <i>Acta Materialia</i> , 2006, 54, 1111-1122.	7.9	124
13	Atmospheric CO <sub>2</sub> consumption by continental erosion: present-day controls and implications for the last glacial maximum. <i>Global and Planetary Change</i> , 1998, 16-17, 107-120.	3.5	119
14	Background levels of heavy metals in surficial sediments of the Gulf of Lions (NW Mediterranean): An approach based on <sup>133</sup> Cs normalization and lead isotope measurements. <i>Environmental Pollution</i> , 2005, 138, 167-177.	7.5	110
15	Advances in X-ray diffraction contrast tomography: flexibility in the setup geometry and application to multiphase materials. <i>Journal of Applied Crystallography</i> , 2013, 46, 297-311.	4.5	108
16	Three-dimensional snow images by X-ray microtomography. <i>Annals of Glaciology</i> , 2001, 32, 75-81.	1.4	107
17	Sources and sinks of sediment-bound contaminants in the Gulf of Lions (NW Mediterranean Sea): A multi-tracer approach. <i>Continental Shelf Research</i> , 2006, 26, 1843-1857.	1.8	106
18	Origin and distribution of terrestrial organic matter in the NW Mediterranean (Gulf of Lions): Exploring the newly developed BIT index. <i>Geochemistry, Geophysics, Geosystems</i> , 2006, 7, n/a-n/a.	2.5	101

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19	Sediment discharge of the rivers of Catalonia, NE Spain, and the influence of human impacts. Journal of Hydrology, 2009, 366, 76-88.	5.4	96
20	Status and evolution of the ESRF beamline ID19. AIP Conference Proceedings, 2010, , .	0.4	94
21	Input of particulate heavy metals from rivers and associated sedimentary deposits on the Gulf of Lion continental shelf. Estuarine, Coastal and Shelf Science, 2008, 77, 285-295.	2.1	93
22	Riverine-driven interhemispheric transport of carbon. Global Biogeochemical Cycles, 2001, 15, 393-405.	4.9	90
23	Hydrological and climatic uncertainties associated with modeling the impact of climate change on water resources of small Mediterranean coastal rivers. Journal of Hydrology, 2014, 511, 403-422.	5.4	86
24	Predicting the 3D fatigue crack growth rate of small cracks using multimodal data via Bayesian networks: In-situ experiments and crystal plasticity simulations. Journal of the Mechanics and Physics of Solids, 2018, 115, 208-229.	4.8	80
25	Microplastic fluxes in a large and a small Mediterranean river catchments: The Tãt and the RhÃne, Northwestern Mediterranean Sea. Science of the Total Environment, 2020, 716, 136984.	8.0	80
26	Fast X-ray tomography and acoustic emission study of damage in metals during continuous tensile tests. Acta Materialia, 2007, 55, 6806-6815.	7.9	75
27	Influence of closure on the 3D propagation of fatigue cracks in a nodular cast iron investigated by X-ray tomography and 3D volume correlation. Acta Materialia, 2010, 58, 2957-2967.	7.9	70
28	Enhanced chemical weathering of rocks during the last glacial maximum: a sink for atmospheric CO2?. Chemical Geology, 1999, 159, 147-161.	3.3	66
29	Impact of flood events on the transport of terrestrial organic matter to the ocean: A study of the Tãt River (SW France) using the BIT index. Organic Geochemistry, 2007, 38, 1593-1606.	1.8	66
30	Evaluating the impact of the recent temperature increase on the hydrology of the Tãt River (Southern) Tj ETQq0 0,0 rgBT /Overlock 10	5.4	64
31	Potential impact of changes in river nutrient supply on global ocean biogeochemistry. Global Biogeochemical Cycles, 2007, 21, .	4.9	64
32	Impact of recent climate change on the hydrology of coastal Mediterranean rivers in Southern France. Climatic Change, 2010, 99, 425-456.	3.6	63
33	Nutrients and carbon budgets for the Gulf of Lion during the Moogli cruises. Oceanologica Acta: European Journal of Oceanology - Revue Europeene De Oceanologie, 2003, 26, 421-433.	0.7	60
34	Advances in synchrotron hard X-ray based imaging. Comptes Rendus Physique, 2008, 9, 624-641.	0.9	60
35	X-ray camera for computed microtomography of biological samples with micrometer resolution using Lu<math>\langle inf \rangle 3</math>Al<math>\langle inf \rangle 5</math>O<math>\langle inf \rangle 58</math> and Y<math>\langle inf \rangle 3</math>Al<math>\langle inf \rangle 5</math>O<math>\langle inf \rangle 58</math> scintillators</title>... 1999, 3659, 170		58
36	Phase imaging using highly coherent X-rays: radiography, tomography, diffraction topography. Journal of Synchrotron Radiation, 2000, 7, 196-201.	2.4	58

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37	Assessing the nonconservative fluvial fluxes of dissolved organic carbon in North America. <i>Journal of Geophysical Research</i> , 2012, 117, .	3.3	57
38	A study of deformation twinning in a titanium alloy by X-ray diffraction contrast tomography. <i>Acta Materialia</i> , 2016, 105, 417-428.	7.9	56
39	TomoBank: a tomographic data repository for computational x-ray science. <i>Measurement Science and Technology</i> , 2018, 29, 034004.	2.6	55
40	Circulation of the Mediterranean Sea and its Variability. , 2012, , 187-256.		54
41	Combining operando synchrotron X-ray tomographic microscopy and scanning X-ray diffraction to study lithium ion batteries. <i>Scientific Reports</i> , 2016, 6, 27994.	3.3	53
42	Fate of metals in coastal sediments of a Mediterranean flood-dominated system: An approach based on total and labile fractions. <i>Estuarine, Coastal and Shelf Science</i> , 2011, 92, 486-495.	2.1	51
43	<title>Submicron focusing of hard x rays with reflecting surfaces at the ESRF</title>. , 2001, 4499, 105.		49
44	Three-dimensional grain growth in pure iron. Part I. statistics on the grain level. <i>Acta Materialia</i> , 2018, 156, 76-85.	7.9	48
45	Early muddy deposits along the Gulf of Lions shoreline: A key for a better understanding of land-to-sea transfer of sediments and associated pollutant fluxes. <i>Marine Geology</i> , 2005, 222-223, 345-358.	2.1	45
46	Quantitative phase contrast tomography using coherent synchrotron radiation. , 2002, 4503, 82.		42
47	High-resolution three-dimensional mapping of individual grains in polycrystals by toptomography. <i>Journal of Applied Crystallography</i> , 2007, 40, 905-911.	4.5	42
48	Controls, budgets and variability of riverine sediment fluxes to the Gulf of Lions (NW Mediterranean) Tj ETQq0 0 0 rgBT /Overlock 10 Tf	8.4	41
49	Assessing reliability of fatigue indicator parameters for small crack growth via a probabilistic framework. <i>Modelling and Simulation in Materials Science and Engineering</i> , 2017, 25, 045010.	2.0	40
50	Climate change evolution of the hydrological balance of the Mediterranean, Black and Caspian Seas: impact of climate model resolution. <i>Climate Dynamics</i> , 2011, 36, 205-228.	3.8	39
51	Nanovoid morphology and distribution in deformed HDPE studied by magnified synchrotron radiation holotomography. <i>Polymer</i> , 2014, 55, 6439-6443.	3.8	36
52	Three dimensional quantification of anisotropic void evolution in deformed semi-crystalline polyamide 6. <i>International Journal of Plasticity</i> , 2016, 83, 19-36.	8.8	34
53	Comparison between diffraction contrast tomography and high-energy diffraction microscopy on a slightly deformed aluminium alloy. <i>IUCr</i> , 2016, 3, 32-42.	2.2	34
54	Predicting the impact of land use on the major element and nutrient fluxes in coastal Mediterranean rivers: The case of the TÃt River (Southern France). <i>Applied Geochemistry</i> , 2007, 22, 230-248.	3.0	33

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55	Three-dimensional full-field X-ray orientation microscopy. Scientific Reports, 2016, 6, 20618.	3.3	33
56	Analysis of Snow Microstructure by Means of X-ray Diffraction Contrast Tomography. Advanced Engineering Materials, 2011, 13, 128-135.	3.5	30
57	Reconstruction of local orientation in grains using a discrete representation of orientation space. Journal of Applied Crystallography, 2014, 47, 1826-1840.	4.5	29
58	Simulation of Short Fatigue Crack Propagation in a 3D Experimental Microstructure. Advanced Engineering Materials, 2017, 19, 1600721.	3.5	25
59	Coupling Diffraction Contrast Tomography with the Finite Element Method. Advanced Engineering Materials, 2016, 18, 903-912.	3.5	24
60	The impact of reservoir construction on riverine sediment and carbon fluxes to the Mediterranean Sea. Progress in Oceanography, 2018, 163, 94-111.	3.2	22
61	The age of river carbon. Nature, 2001, 409, 466-467.	27.8	21
62	Impact of oceanic floods on particulate metal inputs to coastal and deep-sea environments: A case study in the NW Mediterranean Sea. Continental Shelf Research, 2012, 45, 15-26.	1.8	20
63	Incipient Bulk Polycrystal Plasticity Observed by Synchrotron In-Situ Topotomography. Materials, 2018, 11, 2018.	2.9	18
64	Comparison between a near-field and a far-field indexing approach for characterization of a polycrystalline sample volume containing more than 1500 grains. Journal of Applied Crystallography, 2014, 47, 1402-1416.	4.5	17
65	Comparison of voiding mechanisms in semi-crystalline polyamide 6 during tensile and creep tests. Polymer Testing, 2016, 49, 137-146.	4.8	17
66	Multicontamination phenomena occur more often than expected in Mediterranean coastal watercourses: Study case of the Tâ€™t River (France). Science of the Total Environment, 2017, 579, 10-21.	8.0	17
67	3D X-ray Microtomography Volume Correlation to Study Fatigue Crack Growth. Advanced Engineering Materials, 2011, 13, 186-193.	3.5	15
68	A feasibility study of full-field X-ray orientation microscopy at the onset of deformation twinning. Journal of Applied Crystallography, 2016, 49, 544-555.	4.5	11
69	Anthropogenic Reservoirs of Various Sizes Trap Most of the Sediment in the Mediterranean Maghreb Basin. Water (Switzerland), 2018, 10, 927.	2.7	10
70	<title>Quantitative phase tomography by holographic reconstruction</title>. , 1999, 3772, 279.		9
71	The Mediterranean Region as a Paradigm of the Global Decoupling of N and P Between Soils and Freshwaters. Global Biogeochemical Cycles, 2021, 35, e2020GB006874.	4.9	9
72	Three-dimensional morphology of cementite in steel studied by X-ray phase-contrast tomography. Scripta Materialia, 2012, 67, 261-264.	5.2	8

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73	An accurate projection model for diffraction image formation and inversion using a polychromatic cone beam. <i>Journal of Applied Crystallography</i> , 2015, 48, 334-343.	4.5	8
74	Ingested Microplastics in 18 Local Fish Species from the Northwestern Mediterranean Sea. <i>Microplastics</i> , 2022, 1, 186-197.	4.2	8
75	Unravelling Climate and Anthropogenic Forcings on the Evolution of Surface Water Resources in Southern France. <i>Water (Switzerland)</i> , 2020, 12, 3581.	2.7	6
76	Direct Observation of Grain Boundary Wetting by Synchrotron Radiation Imaging Techniques. <i>Defect and Diffusion Forum</i> , 2001, 194-199, 1319-1330.	0.4	5
77	Box-Scan: A Novel 3DXRD Method for Studies of Recrystallization and Grain Growth. <i>Materials Science Forum</i> , 2012, 715-716, 518-520.	0.3	5
78	Tracing tetraether lipids from source to sink in the Rhône River system (NW Mediterranean). <i>Frontiers in Earth Science</i> , 2015, 3, .	1.8	5
79	Interrelations Between Soil Erosion Conditioning Factors in Basins of Ecuador: Contributions to the Spatial Model Construction. , 2021, , 892-903.		5
80	Soil erosion and atmospheric CO <sub>2</sub> during the last glacial maximum: the role of riverine organic matter fluxes. <i>Tellus, Series B: Chemical and Physical Meteorology</i> , 1999, 51, 156-164.	1.6	3
81	X-Ray Micro-Tomography Coupled to the Extended Finite Element Method to Investigate Microstructurally Short Fatigue Cracks. <i>Materials Science Forum</i> , 2008, 567-568, 301-304.	0.3	3
82	Characterisation and Modelling of the Three Dimensional Propagation of Short Fatigue Cracks. <i>Materials Science Forum</i> , 2006, 519-521, 997-1004.	0.3	2
83	Grain Tracking at the High Energy Materials Science Beamline of the Petra III Synchrotron Radiation Source. <i>Materials Science Forum</i> , 0, 652, 70-73.	0.3	2
84	Non Destructive Three Dimensional Imaging of Aluminium Alloys. <i>Materials Science Forum</i> , 2006, 519-521, 1367-1372.	0.3	1
85	In-line x-ray phase-contrast tomography and diffraction-contrast tomography study of the ferrite-cementite microstructure in steel. , 2012, , .		1
86	An Orientation-space Super Sampling Technique for Six-dimensional Diffraction Contrast Tomography. <i>Fundamenta Informaticae</i> , 2016, 146, 219-230.	0.4	1
87	<title>Local reconstruction in 3D synchrotron radiation microtomography</title>. , 1999, , .		0