

Jan van der Kruk

List of Publications by Year in descending order

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119
papers

4,036
citations

94433

37
h-index

128289

60
g-index

121
all docs

121
docs citations

121
times ranked

3092
citing authors

#	ARTICLE	IF	CITATIONS
1	3-D Electromagnetic Modeling Explains Apparent-Velocity Increase in Crosshole GPR Data-Borehole Fluid Effect Correction Method Enables to Incorporating High-Angle Traveltime Data. IEEE Transactions on Geoscience and Remote Sensing, 2022, 60, 1-10.	6.3	1
2	Detection of Tracer Plumes Using Full-Waveform Inversion of Time-Lapse Ground Penetrating Radar Data: A Numerical Study in a High-Resolution Aquifer Model. Water Resources Research, 2022, 58, .	4.2	10
3	Toward high-resolution agronomic soil information and management zones delineated by ground-based electromagnetic induction and aerial drone data. Vadose Zone Journal, 2021, 20, e20099.	2.2	10
4	Improvement of ground-penetrating radar full-waveform inversion images using cone penetration test data. Geophysics, 2021, 86, H13-H25.	2.6	3
5	GPR and EMI characterization of the hyperarid study site of Yungay, Chile: Implications of applying geophysical methods on Mars. Earth and Space Science, 2021, 8, e2021EA001790.	2.6	2
6	Recent development of the crosshole ground penetrating radar full-waveform inversion for hydrogeophysical applications. , 2021, , .		0
7	Effect of fertilizers and irrigation on multi-configuration electromagnetic induction measurements. Soil Use and Management, 2020, 36, 104-116.	4.9	12
8	3D aquifer characterization of the Hermalle-sous-Argenteau test site using crosshole ground-penetrating radar amplitude analysis and full-waveform inversion. Geophysics, 2020, 85, H133-H148.	2.6	12
9	2.5D crosshole GPR full-waveform inversion with synthetic and measured data. Geophysics, 2020, 85, H71-H82.	2.6	12
10	Measuring vertical soil water content profiles by combining horizontal borehole and dispersive surface ground penetrating radar data. Near Surface Geophysics, 2020, 18, 275-294.	1.2	12
11	Simultaneous multichannel multi-offset ground-penetrating radar measurements for soil characterization. Vadose Zone Journal, 2020, 19, e20017.	2.2	19
12	Comparison of regolith physical and chemical characteristics with geophysical data along a climate and ecological gradient, Chilean Coastal Cordillera (26 to 38°S). Soil, 2020, 6, 629-647.	4.9	3
13	Large-scale soil mapping using multi-configuration EMI and supervised image classification. Geoderma, 2019, 335, 133-148.	5.1	60
14	GPR full-waveform inversion of a variably saturated soil-aquifer system. Journal of Applied Geophysics, 2019, 170, 103823.	2.1	12
15	In Situ Detection of Tree Root Systems under Heterogeneous Anthropogenic Soil Conditions Using Ground Penetrating Radar. Journal of Infrastructure Systems, 2019, 25, .	1.8	3
16	Calibration, Conversion, and Quantitative Multi-Layer Inversion of Multi-Coil Rigid-Boom Electromagnetic Induction Data. Sensors, 2019, 19, 4753.	3.8	27
17	Review of crosshole ground-penetrating radar full-waveform inversion of experimental data: Recent developments, challenges, and pitfalls. Geophysics, 2019, 84, H13-H28.	2.6	52
18	Pattern Extraction of Topsoil and Subsoil Heterogeneity and Soil-Crop Interaction Using Unsupervised Bayesian Machine Learning: An Application to Satellite-Derived NDVI Time Series and Electromagnetic Induction Measurements. Journal of Geophysical Research C: Biogeosciences, 2019, 124, 1524-1544.	3.0	9

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19	Geophysical imaging of regolith in landscapes along a climate and vegetation gradient in the Chilean coastal cordillera. <i>Catena</i> , 2019, 180, 146-159.	5.0	18
20	Monitoring Soil Water Content Using Time-lapse Horizontal Borehole GPR Data at the Field-Plot Scale. <i>Vadose Zone Journal</i> , 2019, 18, 190044.	2.2	24
21	Simultaneous calibration and inversion algorithm for multiconfiguration electromagnetic induction data acquired at multiple elevations. <i>Geophysics</i> , 2019, 84, EN1-EN14.	2.6	12
22	Improved resolution of ground penetrating radar full-waveform inversion by using cone penetration test data: A synthetic study. , 2019, , .		1
23	Mapping sand layers in clayey till using crosshole ground-penetrating radar. <i>Geophysics</i> , 2018, 83, A21-A26.	2.6	18
24	Calibration, inversion, and applications of multiconfiguration electromagnetic induction for agricultural top- and subsoil characterization. , 2018, , .		1
25	Time-lapse horizontal borehole GPR measurements to investigate spatial and temporal soil-water content changes. , 2018, , .		0
26	The TERENO-Eur Hydrological Observatory: A Multiscale Multi-Compartment Research Platform for the Advancement of Hydrological Science. <i>Vadose Zone Journal</i> , 2018, 17, 1-22.	2.2	81
27	Simultaneous multi-channel GPR measurements for soil characterization. , 2018, , .		5
28	Radius estimation of subsurface cylindrical objects from ground-penetrating-radar data using full-waveform inversion. <i>Geophysics</i> , 2018, 83, H43-H54.	2.6	27
29	Measuring Soil Water Content with Ground Penetrating Radar: A Decade of Progress. <i>Vadose Zone Journal</i> , 2018, 17, 1-9.	2.2	135
30	Understanding Soil and Plant Interaction by Combining Ground-Based Quantitative Electromagnetic Induction and Airborne Hyperspectral Data. <i>Geophysical Research Letters</i> , 2018, 45, 7571-7579.	4.0	29
31	GPR full-waveform inversion, recent developments, and future opportunities. , 2018, , .		4
32	Spatial variability of soil water content and soil electrical conductivity across scales derived from Electromagnetic Induction and Time Domain Reflectometry. <i>Geoderma</i> , 2018, 314, 160-174.	5.1	38
33	Time-lapse ground-penetrating radar full-waveform inversion to detect tracer plumes: A numerical study. , 2018, , .		2
34	Full-waveform inversion of Crosshole GPR data: Implications for porosity estimation in chalk. <i>Journal of Applied Geophysics</i> , 2017, 140, 102-116.	2.1	34
35	High resolution aquifer characterization using crosshole <scp>GPR</scp> full-waveform tomography: Comparison with direct-push and tracer test data. <i>Water Resources Research</i> , 2017, 53, 49-72.	4.2	39
36	Potential of catchment-wide soil water content prediction using electromagnetic induction in a forest ecosystem. <i>Environmental Earth Sciences</i> , 2017, 76, 1.	2.7	30

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37	Estimation of subsurface cylindrical object properties from GPR full-waveform inversion. , 2017, , .		11
38	Foreword to the special issue on advances in ground-penetrating radar research and applications. IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing, 2017, 10, 4271-4272.	4.9	1
39	Resolving Infiltration-Induced Water Content Profiles by Inversion of Dispersive Ground-Penetrating Radar Data. Vadose Zone Journal, 2017, 16, 1-11.	2.2	134
40	Construction of Minirhizotron Facilities for Investigating Root Zone Processes. Vadose Zone Journal, 2016, 15, 1-13.	2.2	43
41	Towards 3D full-waveform inversion of crosshole GPR data. , 2016, , .		7
42	GPR full-waveform inversion of horizontal ZOP borehole data using GprMax. , 2016, , .		4
43	Mapping peat layer properties with multi-coil offset electromagnetic induction and laser scanning elevation data. Geoderma, 2016, 261, 178-189.	5.1	36
44	Quantitative multi-layer electromagnetic induction inversion and full-waveform inversion of crosshole ground penetrating radar data. Journal of Earth Science (Wuhan, China), 2015, 26, 844-850.	3.2	17
45	Monitoring and Modeling the Terrestrial System from Pores to Catchments: The Transregional Collaborative Research Center on Patterns in the Soil-Vegetation-Atmosphere System. Bulletin of the American Meteorological Society, 2015, 96, 1765-1787.	3.3	80
46	Tools and Techniques: Ground-Penetrating Radar. , 2015, , 209-232.		2
47	Resolving precipitation induced water content profiles by inversion of dispersive GPR data: A numerical study. Journal of Hydrology, 2015, 525, 496-505.	5.4	12
48	Imaging and characterization of facies heterogeneity in an alluvial aquifer using GPR full-waveform inversion and cone penetration tests. Journal of Hydrology, 2015, 524, 680-695.	5.4	53
49	Soil hydrology: Recent methodological advances, challenges, and perspectives. Water Resources Research, 2015, 51, 2616-2633.	4.2	149
50	Crosshole GPR full-waveform inversion and waveguide amplitude analysis: Recent developments and new challenges. , 2015, , .		5
51	Quantifying the effects of soil variability on crop growth using apparent soil electrical conductivity measurements. European Journal of Agronomy, 2015, 64, 8-20.	4.1	119
52	Linking satellite derived LAI patterns with subsoil heterogeneity using large-scale ground-based electromagnetic induction measurements. Geoderma, 2015, 241-242, 262-271.	5.1	73
53	Characterization of low-velocity waveguides in crosshole GPR data using amplitude analysis and full-waveform inversion. , 2014, , .		0
54	Development and drift-analysis of a modular electromagnetic induction system for shallow ground conductivity measurements. Measurement Science and Technology, 2014, 25, 055801.	2.6	12

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55	Improved Characterization of Fine-Texture Soils Using On-Ground GPR Full-Waveform Inversion. IEEE Transactions on Geoscience and Remote Sensing, 2014, 52, 3947-3958.	6.3	54
56	Three-dimensional imaging of subsurface structural patterns using quantitative large-scale multiconfiguration electromagnetic induction data. Water Resources Research, 2014, 50, 2732-2748.	4.2	113
57	On the spatio-temporal dynamics of soil moisture at the field scale. Journal of Hydrology, 2014, 516, 76-96.	5.4	369
58	Detection of spatially limited high-porosity layers using crosshole GPR signal analysis and full-waveform inversion. Water Resources Research, 2014, 50, 6966-6985.	4.2	41
59	Full-waveform inversion of cross-hole GPR data collected in a strongly heterogeneous chalk reservoir analogue with sharp permittivity and conductivity contrasts. , 2014, , .		0
60	Delineation of fluvial sediment architecture of subalpine riverine systems using noninvasive hydrogeophysical methods. Environmental Earth Sciences, 2013, 69, 633-644.	2.7	6
61	Improvements in crosshole GPR full-waveform inversion and application on data measured at the Boise Hydrogeophysics Research Site. Journal of Applied Geophysics, 2013, 99, 114-124.	2.1	34
62	Full-waveform GPR inversion to assess chloride gradients in concrete. NDT and E International, 2013, 57, 74-84.	3.7	62
63	3-D characterization of high-permeability zones in a gravel aquifer using 2-D crosshole GPR full-waveform inversion and waveguide detection. Geophysical Journal International, 2013, 195, 932-944.	2.4	76
64	3D characterization of an aquifer using full-waveform inversion and amplitude analysis. , 2013, , .		0
65	Coupled hydrogeophysical inversion of time-lapse surface GPR data to estimate hydraulic properties of a layered subsurface. Water Resources Research, 2013, 49, 8480-8494.	4.2	48
66	Optimization of acquisition setup for cross-hole: GPR full-waveform inversion using checkerboard analysis. Near Surface Geophysics, 2013, 11, 197-209.	1.2	37
67	Crosshole GPR full-waveform inversion of waveguides acting as preferential flow paths within aquifer systems. Geophysics, 2012, 77, H57-H62.	2.6	55
68	Quantitative conductivity and permittivity estimation using full-waveform inversion of on-ground GPR data. Geophysics, 2012, 77, H79-H91.	2.6	98
69	GPR Full-Waveform Sensitivity and Resolution Analysis Using an FDTD Adjoint Method. IEEE Transactions on Geoscience and Remote Sensing, 2012, 50, 1881-1896.	6.3	38
70	GPR full-waveform inversion of chloride gradients in concrete. , 2012, , .		0
71	Inversion of dispersive GPR pulse propagation in waveguides with heterogeneities and rough and dipping interfaces. Journal of Applied Geophysics, 2012, 81, 88-96.	2.1	20
72	Taming the non-linearity problem in GPR full-waveform inversion for high contrast media. Journal of Applied Geophysics, 2012, 78, 31-43.	2.1	47

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73	Do peatland microforms move through time? Examining the developmental history of a patterned peatland using ground-penetrating radar. <i>Journal of Geophysical Research</i> , 2012, 117, .	3.3	16
74	Integrated analysis of waveguide dispersed GPR pulses using deterministic and Bayesian inversion methods. <i>Near Surface Geophysics</i> , 2012, 10, 641-652.	1.2	18
75	Electromagnetic induction antenna modelling using a linear system of complex antenna transfer functions. <i>Near Surface Geophysics</i> , 2012, 10, 237-247.	1.2	19
76	Chlorides and moisture assessment in concrete by GPR full waveform inversion. <i>Near Surface Geophysics</i> , 2011, 9, 277-286.	1.2	54
77	Quantitative Two-Layer Conductivity Inversion of Multi-Configuration Electromagnetic Induction Measurements. <i>Vadose Zone Journal</i> , 2011, 10, 1319-1330.	2.2	69
78	Taming the non-linearity problem in GPR full-waveform inversion for high contrast media. <i>Journal of Applied Geophysics</i> , 2011, 73, 174-186.	2.1	43
79	Explicit consideration of measurement uncertainty during Bayesian inversion of dispersive GPR data. , 2011, , .		3
80	Combined effective wavelet estimation and full-waveform inversion of GPR data. , 2011, , .		3
81	A New Vector Waveform Inversion Algorithm for Simultaneous Updating of Conductivity and Permittivity Parameters From Combination Crosshole/Borehole-to-Surface GPR Data. <i>IEEE Transactions on Geoscience and Remote Sensing</i> , 2010, 48, 3391-3407.	6.3	175
82	Field observations of shallow freeze and thaw processes using high-frequency ground-penetrating radar. <i>Hydrological Processes</i> , 2010, 24, 2022-2033.	2.6	22
83	Full-waveform inversion of crosshole ground-penetrating radar data to characterize a gravel aquifer close to the Thur River, Switzerland. <i>Near Surface Geophysics</i> , 2010, 8, 635-649.	1.2	92
84	Quantifying field-scale surface soil water content from proximal GPR signal inversion in the time domain. <i>Near Surface Geophysics</i> , 2010, 8, 483-491.	1.2	29
85	6. Toward True-Amplitude Vector Migration of GPR Data Using Exact Radiation Patterns. , 2010, , 97-116.		8
86	Electromagnetic induction calibration using apparent electrical conductivity modelling based on electrical resistivity tomography. <i>Near Surface Geophysics</i> , 2010, 8, 553-561.	1.2	93
87	Properties of precipitation-induced multilayer surface waveguides derived from inversion of dispersive TE and TM GPR data. <i>Geophysics</i> , 2010, 75, WA263-WA273.	2.6	36
88	Full-waveform inversion of crosshole ground penetrating radar data to characterize a gravel aquifer close to the Thur River, Switzerland. , 2010, , .		15
89	Influence of interface roughness and heterogeneities on the waveguide inversion of dispersive GPR data. , 2010, , .		4
90	Full-waveform inversion of multi-offset surface GPR data. , 2010, , .		6

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91	Identifying dispersive GPR signals and inverting for surface wave-guide properties. <i>The Leading Edge</i> , 2009, 28, 1234-1239.	0.7	18
92	Research at the Agrosphere Institute: From the Process Scale to the Catchment Scale. <i>Vadose Zone Journal</i> , 2009, 8, 664-669.	2.2	7
93	Dispersion inversion of electromagnetic pulse propagation within freezing and thawing soil waveguides. <i>Geophysical Research Letters</i> , 2009, 36, .	4.0	41
94	Inversion of TE and TM dispersive GPR data for properties of a layered waveguide. , 2008, , .		0
95	Characterizing a GPR antenna system by near-field electric field measurements. <i>Geophysics</i> , 2007, 72, A51-A55.	2.6	58
96	Vector-migration of standard copolarized 3D GPR data. <i>Geophysics</i> , 2007, 72, J65-J75.	2.6	32
97	Fundamental and Higher Mode Inversion of Dispersed GPR Waves Propagating in an Ice Layer. <i>IEEE Transactions on Geoscience and Remote Sensing</i> , 2007, 45, 2483-2491.	6.3	55
98	Properties of surface waveguides derived from separate and joint inversion of dispersive TE and TM GPR data. <i>Geophysics</i> , 2006, 71, K19-K29.	2.6	80
99	Semblance-based topographic migration (SBTM): a method for identifying fracture zones in 3D georadar data. <i>Near Surface Geophysics</i> , 2006, 4, 79-88.	1.2	23
100	Radar "lensing"™ by a small river: Can a layer of surface water improve the signal?. <i>Near Surface Geophysics</i> , 2006, 4, 69-74.	1.2	5
101	Three-dimensional multicomponent georadar imaging of sedimentary structures. <i>Near Surface Geophysics</i> , 2006, 4, 39-48.	1.2	24
102	Properties of surface waveguides derived from inversion of fundamental and higher mode dispersive GPR data. <i>IEEE Transactions on Geoscience and Remote Sensing</i> , 2006, 44, 2908-2915.	6.3	45
103	Inversion of fundamental and higher order mode TE and TM dispersive GPR data for properties of a thin surface waveguide in New England. , 2006, , .		0
104	Acquisition and processing strategies for 3D georadar surveying a region characterized by rugged topography. <i>Geophysics</i> , 2005, 70, K53-K61.	2.6	56
105	Multicomponent georadar imaging that corrects for total-field radiation. , 2005, , .		0
106	Separate and joint inversion of dispersed TE and TM georadar data for properties of thin surface waveguides. , 2005, , .		0
107	Three-dimensional GPR imaging in the horizontal wavenumber domain for different heights of source and receiver antennae. <i>Near Surface Geophysics</i> , 2004, 2, 25-31.	1.2	4
108	Reduction of reflections from above surface objects in GPR data. <i>Journal of Applied Geophysics</i> , 2004, 55, 271-278.	2.1	30

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109	Title is missing!. Subsurface Sensing Technologies and Applications, 2003, 4, 61-99.	0.9	20
110	Three-dimensional imaging of multicomponent ground-penetrating radar data. Geophysics, 2003, 68, 1241-1254.	2.6	149
111	<title>Effective source wavelet determination</title>. , 2002, 4758, 144.		6
112	<title>Multicomponent imaging of different objects with different strike orientations</title>. , 2002, , .		4
113	<title>Influence of the soil on reflections from above surface objects in GPR data</title>. , 2000, , .		4
114	<title>Multicomponent 3D imaging of ground penetrating radar data using matrix inversion in the spatial Fourier domain</title>. , 2000, 4084, 508.		0
115	An apparent-resistivity concept for low-frequency electromagnetic sounding techniques. Geophysical Prospecting, 2000, 48, 1033-1052.	1.9	25
116	Background of ground penetrating radar measurements. Geologie En Mijnbouw/Netherlands Journal of Geosciences, 1998, 77, 177-188.	0.9	11
117	The Detection of Abandoned Mine Shafts in the Netherlands. Environmental and Engineering Geoscience, 1998, IV, 307-316.	0.9	4
118	Multi-component GPR imaging for different heights of source and receiver antennas. , 0, , .		1
119	Geophysical Methods for Field-Scale Imaging of Root Zone Properties and Processes. SSSA Special Publication Series, 0, , 247-282.	0.2	13