

Essam Heggy

List of Publications by Year in descending order

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Version: 2024-02-01

95
papers

3,349
citations

136950

32
h-index

149698

56
g-index

97
all docs

97
docs citations

97
times ranked

2744
citing authors

#	ARTICLE	IF	CITATIONS
1	Exploring the nature of buried linear features in the Qatar peninsula: Archaeological and paleoclimatic implications. ISPRS Journal of Photogrammetry and Remote Sensing, 2022, 183, 210-227.	11.1	3
2	Processing and Analysis for Radio Science Experiments (PARSE): Graphical Interface for Bistatic Radar. Planetary Science Journal, 2022, 3, 24.	3.6	0
3	Dataset of daily near-surface air temperature in China from 1979 to 2018. Earth System Science Data, 2022, 14, 1413-1432.	9.9	26
4	Impacts of water stress on lagoonal ecosystem degradation in semi-arid coastal areas. Marine Pollution Bulletin, 2022, 179, 113445.	5.0	5
5	Assessing Subwavelength VHF Radar Scattering Losses in Hyperarid Carbonate Formations. IEEE Geoscience and Remote Sensing Letters, 2021, 18, 597-601.	3.1	4
6	Deep Trek: Mission Concepts for Exploring Subsurface Habitability & Life on Mars – A Window into Subsurface Life in the Solar System. , 2021, 53, .		0
7	Egypt's water budget deficit and suggested mitigation policies for the Grand Ethiopian Renaissance Dam filling scenarios. Environmental Research Letters, 2021, 16, 074022.	5.2	41
8	Groundwater mixing in shallow aquifers stressed by land cover/land use changes under hyper-arid conditions. Journal of Hydrology, 2021, 598, 126245.	5.4	29
9	Exploring Ceres's Unusual Regolith Porosity and Its Implications for Volatile Retention. Planetary Science Journal, 2021, 2, 182.	3.6	1
10	Groundwater mounding: A diagnostic feature for mapping aquifer connectivity in hyper-arid deserts. Science of the Total Environment, 2021, 801, 149760.	8.0	23
11	Alarming coastal vulnerability of the deltaic and sandy beaches of North Africa. Scientific Reports, 2021, 11, 2320.	3.3	72
12	Groundwater level prediction in arid areas using wavelet analysis and Gaussian process regression. Engineering Applications of Computational Fluid Mechanics, 2021, 15, 1147-1158.	3.1	36
13	Exploring Deserts Response to Climate Change from the Orbiting Arid Subsurface and Ice Sheet Sounder (OASIS). , 2021, , .		2
14	Utilizing the SAR, GIS, and Novel Hybrid Metaheuristic-GMDH Algorithm for Flood Susceptibility Mapping. , 2021, , .		4
15	Feasibility of Estimating Snow Emissivity Via Assimilation of Multifrequency Passive Microwave Data. , 2021, , .		0
16	Mapping Transient Soil Moisture Post Rainstorm Events in Hyper-Arid Karst Environments Using Multi-Sensor Observations. , 2021, , .		1
17	Bistatic Radar Occultations of Planetary Surfaces. IEEE Geoscience and Remote Sensing Letters, 2020, 17, 804-808.	3.1	3
18	Bulk composition of regolith fines on lunar crater floors: Initial investigation by LRO/Mini-RF. Earth and Planetary Science Letters, 2020, 541, 116274.	4.4	18

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19	Feasibility of Estimating Turbulent Heat Fluxes via Variational Assimilation of Reference-Level Air Temperature and Specific Humidity Observations. <i>Remote Sensing</i> , 2020, 12, 1065.	4.0	1
20	Resolving Groundwater Conduits in Hyper-Arid Eroded Karsts Using High-Resolution L-Band SAR and Optical Images. , 2020, , .		0
21	Post-rendezvous radar properties of comet 67P/CG from the Rosetta Mission: understanding future Earth-based radar observations and the dynamical evolution of comets. <i>Monthly Notices of the Royal Astronomical Society</i> , 2019, 489, 1667-1683.	4.4	4
22	Photogrammetric assessment of shoreline retreat in North Africa: Anthropogenic and natural drivers. <i>ISPRS Journal of Photogrammetry and Remote Sensing</i> , 2019, 157, 73-92.	11.1	46
23	Groundwater Mounding in Fractured Fossil Aquifers in the Saharan-Arabian Desert. <i>Advances in Science, Technology and Innovation</i> , 2019, , 359-362.	0.4	4
24	A deep groundwater origin for recurring slope lineae on Mars. <i>Nature Geoscience</i> , 2019, 12, 235-241.	12.9	40
25	Groundwater dynamics in fossil fractured carbonate aquifers in Eastern Arabian Peninsula: A preliminary investigation. <i>Journal of Hydrology</i> , 2019, 571, 460-470.	5.4	35
26	Assessing Sub-Wavelength VHF Radar Scattering Losses in Dry Terrains: Application to Karst Environments. , 2019, , .		0
27	Radar Probing of Subsurface Moisture in Barchan Dunes. <i>Advances in Science, Technology and Innovation</i> , 2019, , 233-235.	0.4	1
28	Understanding the Evolution of Water Deficit in the North African Region. <i>Advances in Science, Technology and Innovation</i> , 2018, , 849-851.	0.4	0
29	Direct observations of asteroid interior and regolith structure: Science measurement requirements. <i>Advances in Space Research</i> , 2018, 62, 2141-2162.	2.6	54
30	Exploring morphology, layering and formation history of linear terrestrial dunes from radar observations: Implications for Titan. <i>Remote Sensing of Environment</i> , 2018, 204, 296-307.	11.0	6
31	Synthetic aperture radar imaging of the interior of comets using time-domain back-projection. , 2018, , .		0
32	Quantifying Subsurface Propagation Losses for VHF Radar Sounding Waves in Hyper-Arid Terrains. , 2018, , .		4
33	Probing groundwater in arid environments: challenges and opportunities south of the Mediterranean basin. <i>Euro-Mediterranean Journal for Environmental Integration</i> , 2018, 3, 1.	1.3	5
34	Forecasting water budget deficits and groundwater depletion in the main fossil aquifer systems in North Africa and the Arabian Peninsula. <i>Global Environmental Change</i> , 2018, 53, 157-173.	7.8	42
35	Comparing dune migration measured from remote sensing with sand flux prediction based on weather data and model, a test case in Qatar. <i>Earth and Planetary Science Letters</i> , 2018, 497, 12-21.	4.4	28
36	Groundwater Exploration in the Solar System: "the Restless Hunt for Life" <i>Advances in Science, Technology and Innovation</i> , 2018, , 53-54.	0.4	0

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37	Radar probing of Jovian icy moons: Understanding subsurface water and structure detectability in the JUICE and Europa missions. <i>Icarus</i> , 2017, 285, 237-251.	2.5	54
38	Orbital bistatic radar observations of asteroid Vesta by the Dawn mission. <i>Nature Communications</i> , 2017, 8, 409.	12.8	8
39	Radar Sounding Through the Earth's Ionosphere at 45 MHz. <i>IEEE Transactions on Geoscience and Remote Sensing</i> , 2017, 55, 5833-5842.	6.3	18
40	The WISDOM Radar: Unveiling the Subsurface Beneath the ExoMars Rover and Identifying the Best Locations for Drilling. <i>Astrobiology</i> , 2017, 17, 565-584.	3.0	50
41	Cosmochemical implications of CONSERT permittivity characterization of 67P/CG. <i>Monthly Notices of the Royal Astronomical Society</i> , 2016, 462, S516-S532.	4.4	59
42	Permittivity measurements of porous matter in support of investigations of the surface and interior of 67P/Churyumov-Gerasimenko. <i>Astronomy and Astrophysics</i> , 2015, 583, A39.	5.1	12
43	Computing low-frequency radar surface echoes for planetary radar using Huygens's Fresnel's principle. <i>Radio Science</i> , 2015, 50, 1097-1109.	1.6	21
44	Mars Advanced Radar for Subsurface and Ionospheric Sounding (MARSIS) after nine years of operation: A summary. <i>Planetary and Space Science</i> , 2015, 112, 98-114.	1.7	66
45	Properties of the 67P/Churyumov-Gerasimenko interior revealed by CONSERT radar. <i>Science</i> , 2015, 349, aab0639.	12.6	178
46	Dielectric properties of Asteroid Vesta's surface as constrained by Dawn VIR observations. <i>Icarus</i> , 2015, 262, 93-101.	2.5	10
47	Geophysical Monitoring of Ground Surface Deformation Associated with a Confined Aquifer Storage and Recovery Operation. <i>Water Resources Management</i> , 2015, 29, 4667-4682.	3.9	9
48	InSAR Assessment of Surface Deformations in Urban Coastal Terrains Associated With Groundwater Dynamics. <i>IEEE Transactions on Geoscience and Remote Sensing</i> , 2015, 53, 6356-6371.	6.3	22
49	A passive probe for subsurface oceans and liquid water in Jupiter's icy moons. <i>Icarus</i> , 2015, 248, 463-477.	2.5	39
50	Radar investigations of Apollinaris Mons on Mars: Exploring the origin of the fan deposits. <i>Planetary and Space Science</i> , 2014, 103, 262-272.	1.7	4
51	Quantification of L-band InSAR coherence over volcanic areas using LiDAR and in situ measurements. <i>Remote Sensing of Environment</i> , 2014, 152, 202-216.	11.0	13
52	An advanced photogrammetric method to measure surface roughness: Application to volcanic terrains in the Piton de la Fournaise, Reunion Island. <i>Remote Sensing of Environment</i> , 2013, 135, 1-11.	11.0	62
53	Dielectric and hardness measurements of planetary analog rocks in support of in-situ subsurface sampling. <i>Planetary and Space Science</i> , 2013, 86, 150-154.	1.7	25
54	Orbiting Arid Subsurface and Ice Sheet Sounder (OASIS): Exploring desert aquifers and polar ice sheets and their role in current and paleo-climate evolution. , 2013, , .		15

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55	L-band InSAR decorrelation analysis in volcanic terrains using airborne LiDAR data and in situ measurements: The case of the Piton de la Fournaise volcano, France. , 2012, , .		1
56	An upper limit for ice in Shackleton crater as revealed by LRO Miniâ€RF orbital radar. Geophysical Research Letters, 2012, 39, .	4.0	65
57	Radar properties of comets: Parametric dielectric modeling of Comet 67P/Churyumovâ€™Gerasimenko. Icarus, 2012, 221, 925-939.	2.5	50
58	Searching for evidence of hydrothermal activity at Apollinaris Mons, Mars. Icarus, 2012, 217, 297-314.	2.5	64
59	Modeling radar scattering from icy lunar regoliths at 13 cm and 4 cm wavelengths. Journal of Geophysical Research, 2011, 116, .	3.3	39
60	Modeling polarimetric radar scattering from the lunar surface: Study on the effect of physical properties of the regolith layer. Journal of Geophysical Research, 2011, 116, .	3.3	67
61	Radar sounding of temperate permafrost in Alaska: Analogy to the Martian midlatitude to high-latitude ice-rich terrains. Journal of Geophysical Research, 2011, 116, .	3.3	24
62	Modeling radar scattering from icy lunar regoliths. , 2011, , .		0
63	Robotic Follow-up for Human Exploration. , 2010, , .		8
64	Coupling polarimetric L-Band insar and airborne lidar to characterize the geomorphological deformations in the piton de la fournaise volcano. , 2010, , .		0
65	Depth of the Martian cryosphere: Revised estimates and implications for the existence and detection of subpermafrost groundwater. Journal of Geophysical Research, 2010, 115, .	3.3	200
66	Initial results for the north pole of the Moon from Miniâ€SAR, Chandrayaanâ€™1 mission. Geophysical Research Letters, 2010, 37, .	4.0	149
67	Geoelectrical constraints on radar probing of shallow water-saturated zones within karstified carbonates in semi-arid environments. Journal of Applied Geophysics, 2010, 70, 181-191.	2.1	22
68	Exploring the Martian subsurface of Athabasca using MARSIS radar data: Testing the volcanic and fluvial hypotheses for the origin of the morphology. , 2009, , .		0
69	MARSIS radar sounder observations in the vicinity of Ma'adim Vallis, Mars. Icarus, 2009, 201, 460-473.	2.5	7
70	Sounding the subsurface of Athabasca Valles using MARSIS radar data: Exploring the volcanic and fluvial hypotheses for the origin of the rafted plate terrain. Journal of Geophysical Research, 2009, 114, .	3.3	19
71	MARSIS subsurface radar investigations of the South Polar reentrant Chasma Australe. Journal of Geophysical Research, 2008, 113, .	3.3	13
72	Finite difference time domain simulation of radar wave propagation through comet nuclei dielectric models. Meteoritics and Planetary Science, 2008, 43, 1085-1095.	1.6	10

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73	Mars North Polar Deposits: Stratigraphy, Age, and Geodynamical Response. <i>Science</i> , 2008, 320, 1182-1185.	12.6	271
74	Mapping exposed and buried lava flows using synthetic aperture and ground-penetrating radar in Craters of the Moon lava field. <i>Geophysics</i> , 2007, 72, B161-B174.	2.6	8
75	Subsurface Radar Sounding of the South Polar Layered Deposits of Mars. <i>Science</i> , 2007, 316, 92-95.	12.6	330
76	Probing structural elements of small buried craters using ground-penetrating radar in the southwestern Egyptian desert: Implications for Mars shallow sounding. <i>Geophysical Research Letters</i> , 2006, 33, .	4.0	13
77	Low-frequency radar sounding investigations of the North Amargosa Desert, Nevada: A potential analog of conductive subsurface environments on Mars. <i>Journal of Geophysical Research</i> , 2006, 111, .	3.3	16
78	A study of P-band synthetic aperture radar applicability and performance for Mars exploration: Imaging subsurface geology and detecting shallow moisture. <i>Journal of Geophysical Research</i> , 2006, 111, .	3.3	21
79	Ground-penetrating radar sounding in mafic lava flows: Assessing attenuation and scattering losses in Mars-analog volcanic terrains. <i>Journal of Geophysical Research</i> , 2006, 111, .	3.3	48
80	Absorption and scattering in ground-penetrating radar: Analysis of the Bishop Tuff. <i>Journal of Geophysical Research</i> , 2006, 111, .	3.3	67
81	Radar investigations of planetary and terrestrial environments. <i>Journal of Geophysical Research</i> , 2006, 111, .	3.3	7
82	An extended field of crater-shaped structures in the Gilf Kebir region, Egypt: Observations and hypotheses about their origin. <i>Journal of African Earth Sciences</i> , 2006, 46, 281-299.	2.0	32
83	Surface and subsurface structural mapping using low frequency radar: A synthesis of the Mauritanian and Egyptian experiments. <i>Journal of African Earth Sciences</i> , 2006, 44, 220-228.	2.0	10
84	Correction to "Ground-penetrating radar sounding in mafic lava flows: Assessing attenuation and scattering losses in Mars-analog volcanic terrains". <i>Journal of Geophysical Research</i> , 2006, 111, .	3.3	0
85	Radar Soundings of the Subsurface of Mars. <i>Science</i> , 2005, 310, 1925-1928.	12.6	327
86	Discovery of the largest impact crater field on Earth in the Gilf Kebir region, Egypt. <i>Comptes Rendus - Geoscience</i> , 2004, 336, 1491-1500.	1.2	36
87	Local geoelectrical models of the Martian subsurface for shallow groundwater detection using sounding radars. <i>Journal of Geophysical Research</i> , 2003, 108, .	3.3	32
88	Discovery of a double impact crater in Libya: the astrobleme of Arkenu. <i>Comptes Rendus - Geoscience</i> , 2003, 335, 1059-1069.	1.2	33
89	Subsurface imaging in south-central Egypt using low-frequency radar: bir safsaf revisited. <i>IEEE Transactions on Geoscience and Remote Sensing</i> , 2003, 41, 1672-1684.	6.3	62
90	<title>Water detection in the Martian subsurface</title>. , 2002, , .		1

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91	<title>Subsurface imaging with low-frequency SAR field validation in France and Egypt using ground-penetrating radar</title>. , 2002, 4758, 217.		3
92	Performances of ground penetrating radars in arid volcanic regions: Consequences for Mars subsurface exploration. Geophysical Research Letters, 2001, 28, 911-914.	4.0	22
93	On Water Detection in the Martian Subsurface Using Sounding Radar. Icarus, 2001, 154, 244-257.	2.5	66
94	Experimental validation of a GPR dedicated to the Martian subsurface exploration (Pyla sand dune). , 0, , .		0
95	Hydrometeorology: Review of Past, Present and Future Observation Methods. , 0, , .		1