# Peggy O'Neill

List of Publications by Year
in descending order



| | | | |
|---|---|---|---|
| 115 papers | 7,897 citations | 81900 39 h-index | 71685 76 g-index |
| 116 all docs | 116 docs citations | 116 times ranked | 4547 citing authors |

| # | Article | IF | Citations |
|---|---|---|---|
| 1 | The Soil Moisture Active Passive (SMAP) Mission. Proceedings of the IEEE, 2010, 98, 704-716. | 21.3 | 2,546 |
| 2 | Validation of SMAP surface soil moisture products with core validation sites. Remote Sensing of Environment, 2017, 191, 215-231. | 11.0 | 503 |
| 3 | Assessment of the SMAP Passive Soil Moisture Product. IEEE Transactions on Geoscience and Remote Sensing, 2016, 54, 4994-5007. | 6.3 | 460 |
| 4 | Modelling the passive microwave signature from land surfaces: A review of recent results and application to the L-band SMOS & SMAP soil moisture retrieval algorithms. Remote Sensing of Environment, 2017, 192, 238-262. | 11.0 | 323 |
| 5 | Development and assessment of the SMAP enhanced passive soil moisture product. Remote Sensing of Environment, 2018, 204, 931-941. | 11.0 | 297 |
| 6 | The hydrosphere State (hydros) Satellite mission: an Earth system pathfinder for global mapping of soil moisture and land freeze/thaw. IEEE Transactions on Geoscience and Remote Sensing, 2004, 42, 2184-2195. | 6.3 | 217 |
| 7 | Passive Microwave Soil Moisture Research. IEEE Transactions on Geoscience and Remote Sensing, 1986, GE-24, 12-22. | 6.3 | 199 |
| 8 | Multifrequency Measurements of the Effects of Soil Moisture, Soil Texture, And Surface Roughness. IEEE Transactions on Geoscience and Remote Sensing, 1983, GE-21, 44-51. | 6.3 | 192 |
| 9 | The SMAP and Copernicus Sentinel 1A/B microwave active-passive high resolution surface soil moisture product. Remote Sensing of Environment, 2019, 233, 111380. | 11.0 | 175 |
| 10 | Effects of corn on C- and L-band radar backscatter: A correction method for soil moisture retrieval. Remote Sensing of Environment, 2010, 114, 2417-2430. | 11.0 | 149 |
| 11 | SMAP L-Band Microwave Radiometer: Instrument Design and First Year on Orbit. IEEE Transactions on Geoscience and Remote Sensing, 2017, 55, 1954-1966. | 6.3 | 141 |
| 12 | Attenuation of soil microwave emission by corn and soybeans at 1.4 and 5 GHz. IEEE Transactions on Geoscience and Remote Sensing, 1990, 28, 978-980. | 6.3 | 118 |
| 13 | A parameterized surface reflectivity model and estimation of bare-surface soil moisture with L-band radiometer. IEEE Transactions on Geoscience and Remote Sensing, 2002, 40, 2674-2686. | 6.3 | 113 |
| 14 | Partitioning evapotranspiration in semiarid grassland and shrubland ecosystems using time series of soil surface temperature. Agricultural and Forest Meteorology, 2009, 149, 59-72. | 4.8 | 107 |
| 15 | Effective tree scattering and opacity at L-band. Remote Sensing of Environment, 2012, 118, 1-9. | 11.0 | 96 |
| 16 | Global Soil Moisture From the Aquarius/SAC-D Satellite: Description and Initial Assessment. IEEE Geoscience and Remote Sensing Letters, 2015, 12, 923-927. | 3.1 | 96 |
| 17 | Evaluating soil moisture retrievals from ESA's SMOS and NASA's SMAP brightness temperature datasets. Remote Sensing of Environment, 2017, 193, 257-273. | 11.0 | 90 |
| 18 | An observing system simulation experiment for hydros radiometer-only soil moisture products. IEEE Transactions on Geoscience and Remote Sensing, 2005, 43, 1289-1303. | 6.3 | 85 |

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| 19 | Passive microwave observation of diurnal surface soil moisture. IEEE Transactions on Geoscience and Remote Sensing, 1997, 35, 1210-1222. | 6.3 | 84 |
| 20 | A First-Order Radiative Transfer Model for Microwave Radiometry of Forest Canopies at L-Band. IEEE Transactions on Geoscience and Remote Sensing, 2011, 49, 3167-3179. | 6.3 | 77 |
| 21 | Soil moisture and rainfall estimation over a semiarid environment with the ESTAR microwave radiometer. IEEE Transactions on Geoscience and Remote Sensing, 1993, 31, 836-841. | 6.3 | 75 |
| 22 | A comparison of soil moisture retrieval models using SIR-C measurements over the little Washita River watershed. Remote Sensing of Environment, 1997, 59, 308-320. | 11.0 | 71 |
| 23 | Canadian Experiment for Soil Moisture in 2010 (CanEx-SM10): Overview and Preliminary Results. IEEE Transactions on Geoscience and Remote Sensing, 2013, 51, 347-363. | 6.3 | 71 |
| 24 | Surface Soil Moisture Retrieval Using the L-Band Synthetic Aperture Radar Onboard the Soil Moisture Activeâ€“Passive Satellite and Evaluation at Core Validation Sites. IEEE Transactions on Geoscience and Remote Sensing, 2017, 55, 1897-1914. | 6.3 | 64 |
| 25 | Soil Moisture Retrieval During a Corn Growth Cycle Using L-Band (1.6 GHz) Radar Observations. IEEE Transactions on Geoscience and Remote Sensing, 2008, 46, 2365-2374. | 6.3 | 62 |
| 26 | Improved SMAP Dual-Channel Algorithm for the Retrieval of Soil Moisture. IEEE Transactions on Geoscience and Remote Sensing, 2020, 58, 3894-3905. | 6.3 | 62 |
| 27 | NASA's Soil Moisture Active Passive (SMAP) Mission and Opportunities for Applications Users. Bulletin of the American Meteorological Society, 2013, 94, 1125-1128. | 3.3 | 59 |
| 28 | The SMAP mission combined active-passive soil moisture product at 9â€¯km and 3â€¯km spatial resolutions. Remote Sensing of Environment, 2018, 211, 204-217. | 11.0 | 59 |
| 29 | Passive microwave remote sensing of soil moisture from an aircraft platform. Remote Sensing of Environment, 1984, 14, 135-151. | 11.0 | 55 |
| 30 | Surface Soil Moisture Retrieval and Mapping Using High-Frequency Microwave Satellite Observations in the Southern Great Plains. Journal of Hydrometeorology, 2002, 3, 688-699. | 1.9 | 54 |
| 31 | Multifrequency Microwave Radiometer Measurements of Soil Moisture. IEEE Transactions on Geoscience and Remote Sensing, 1982, GE-20, 468-475. | 6.3 | 51 |
| 32 | Performance evaluation of WRF-Noah Land surface model estimated soil moisture for hydrological application: Synergistic evaluation using SMOS retrieved soil moisture. Journal of Hydrology, 2015, 529, 200-212. | 5.4 | 50 |
| 33 | Assessment of SMOS soil moisture retrieval parameters using tauâ€“omega algorithms for soil moisture deficit estimation. Journal of Hydrology, 2014, 519, 574-587. | 5.4 | 49 |
| 34 | Using a modeling approach to predict soil hydraulic properties from passive microwave measurements. IEEE Transactions on Geoscience and Remote Sensing, 1998, 36, 454-462. | 6.3 | 48 |
| 35 | The Soil Moisture Active/Passive Mission (SMAP). , 2008, , . | | 48 |
| 36 | SCoBi-Veg: A Generalized Bistatic Scattering Model of Reflectometry From Vegetation for Signals of Opportunity Applications. IEEE Transactions on Geoscience and Remote Sensing, 2019, 57, 1049-1068. | 6.3 | 48 |

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| 37 | Estimating Soil Hydraulic Parameters Using Passive Microwave Data. IEEE Transactions on Geoscience and Remote Sensing, 1986, GE-24, 930-936. | 6.3 | 46 |
| 38 | An assessment of the differences between spatial resolution and grid size for the SMAP enhanced soil moisture product over homogeneous sites. Remote Sensing of Environment, 2018, 207, 65-70. | 11.0 | 46 |
| 39 | Comparison of high-resolution airborne soil moisture retrievals to SMAP soil moisture during the SMAP validation experiment 2016 (SMAPVEX16). Remote Sensing of Environment, 2019, 227, 137-150. | 11.0 | 45 |
| 40 | Salinity Effects on the Microwave Emission of Soils. IEEE Transactions on Geoscience and Remote Sensing, 1987, GE-25, 214-220. | 6.3 | 44 |
| 41 | Evaluation of Dielectric Mixing Models for Passive Microwave Soil Moisture Retrieval Using Data From ComRAD Ground-Based SMAP Simulator. IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing, 2015, 8, 4345-4354. | 4.9 | 44 |
| 42 | SMAP Detects Soil Moisture Under Temperate Forest Canopies. Geophysical Research Letters, 2020, 47, e2020GL089697. | 4.0 | 34 |
| 43 | The NASA Soil Moisture Active Passive (SMAP) mission: Overview. , 2010, , . | | 33 |
| 44 | Effect of Digital Elevation Model resolution on topographic correction of airborne SAR. International Journal of Remote Sensing, 1998, 19, 3075-3096. | 2.9 | 29 |
| 45 | Temporal observations of surface soil moisture using a passive microwave sensor. Remote Sensing of Environment, 1987, 21, 281-296. | 11.0 | 28 |
| 46 | Comparison of SMOS and SMAP soil moisture retrieval approaches using tower-based radiometer data over a vineyard field. Remote Sensing of Environment, 2014, 154, 89-101. | 11.0 | 27 |
| 47 | L-Band Radar Estimation of Forest Attenuation for Active/Passive Soil Moisture Inversion. IEEE Transactions on Geoscience and Remote Sensing, 2009, 47, 3026-3040. | 6.3 | 25 |
| 48 | Impact of Conifer Forest Litter on Microwave Emission at L-Band. IEEE Transactions on Geoscience and Remote Sensing, 2012, 50, 1071-1084. | 6.3 | 22 |
| 49 | Microwave Dielectric Model for Aggregated Soils. IEEE Transactions on Geoscience and Remote Sensing, 1986, GE-24, 920-929. | 6.3 | 21 |
| 50 | Correction of Surface Roughness and Topographic Effects on Airborne SAR in Mountainous Rangeland Areas. Remote Sensing of Environment, 1999, 67, 124-136. | 11.0 | 21 |
| 51 | Soil Moisture Active/Passive (SMAP) Mission concept. Proceedings of SPIE, 2008, , . | 0.8 | 21 |
| 52 | Evaporation from Nonvegetated Surfaces: Surface Aridity Methods and Passive Microwave Remote Sensing. Journal of Applied Meteorology and Climatology, 1999, 38, 1346-1351. | 1.7 | 20 |
| 53 | Improving Spaceborne Radiometer Soil Moisture Retrievals With Alternative Aggregation Rules for Ancillary Parameters in Highly Heterogeneous Vegetated Areas. IEEE Geoscience and Remote Sensing Letters, 2008, 5, 261-265. | 3.1 | 20 |
| 54 | Effects of corn stalk orientation and water content on passive microwave sensing of soil moisture. Remote Sensing of Environment, 1984, 16, 55-67. | 11.0 | 19 |

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| 55 | Considering combined or separated roughness and vegetation effects in soil moisture retrievals. International Journal of Applied Earth Observation and Geoinformation, 2017, 55, 73-86. | 2.8 | 19 |
| 56 | Observed effects of soil organic matter content on the microwave emissivity of soils. Remote Sensing of Environment, 1990, 31, 175-182. | 11.0 | 18 |
| 57 | L-Band Radar Experiment and Modeling of a Corn Canopy Over a Full Growing Season. IEEE Transactions on Geoscience and Remote Sensing, 2020, 58, 5821-5835. | 6.3 | 16 |
| 58 | Microwave Radiometry at Frequencies From 500 to 1400 MHz: An Emerging Technology for Earth Observations. IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing, 2021, 14, 4894-4914. | 4.9 | 16 |
| 59 | Combining SMAP and Sentinel data for high-resolution Soil Moisture product. , 2016, , . | | 14 |
| 60 | Appraisal of SMAP Operational Soil Moisture Product from a Global Perspective. Remote Sensing, 2020, 12, 1977. | 4.0 | 14 |
| 61 | Soil water infiltration observation with microwave radiometers. IEEE Transactions on Geoscience and Remote Sensing, 1998, 36, 1376-1383. | 6.3 | 12 |
| 62 | Technical Note: Calibration and validation of geophysical observation models. Biogeosciences, 2012, 9, 2195-2201. | 3.3 | 12 |
| 63 | How Satellite Soil Moisture Data Can Help to Monitor the Impacts of Climate Change: SMAP Case Studies. IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing, 2020, 13, 1590-1596. | 4.9 | 12 |
| 64 | Assessing Disaggregated SMAP Soil Moisture Products in the United States. IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing, 2021, 14, 2577-2592. | 4.9 | 12 |
| 65 | Significance of agricultural row structure on the microwave emissivity of soils. IEEE Transactions on Geoscience and Remote Sensing, 1988, 26, 580-589. | 6.3 | 11 |
| 66 | The NASA Soil Moisture Active Passive (SMAP) mission formulation. , 2011, , . | | 11 |
| 67 | The backscattering contribution of soybean pods at L-band. Remote Sensing of Environment, 2020, 248, 111977. | 11.0 | 10 |
| 68 | Microwave remote sensing of soil moisture: a comparison of results from different truck and aircraft platforms. International Journal of Remote Sensing, 1985, 6, 1125-1134. | 2.9 | 9 |
| 69 | Huntsville '96: An experiment in ground-based microwave remote sensing of soil moisture. International Journal of Remote Sensing, 1999, 20, 823-828. | 2.9 | 9 |
| 70 | Evaluation of the validated Soil Moisture product from the SMAP radiometer. , 2016, , . | | 9 |
| 71 | Improving Brightness Temperature Measurements Near Coastal Areas for SMAP. IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing, 2019, 12, 4578-4588. | 4.9 | 9 |
| 72 | Microwave emission and crop residues. Remote Sensing of Environment, 1991, 36, 129-136. | 11.0 | 8 |

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| 73 | Observations of coherent emissions from soils. Radio Science, 1998, 33, 267-272. | 1.6 | 8 |
| 74 | ComRAD active / passive microwave measurement of tree canopies. , 2007, , . | | 8 |
| 75 | Vegetation water content mapping in a diverse agricultural landscape: National Airborne Field Experiment 2006. Journal of Applied Remote Sensing, 2010, 4, 043532. | 1.3 | 8 |
| 76 | Combined Radarâ€“Radiometer Surface Soil Moisture and Roughness Estimation. IEEE Transactions on Geoscience and Remote Sensing, 2017, 55, 4098-4110. | 6.3 | 8 |
| 77 | L Band Brightness Temperature Observations over a Corn Canopy during the Entire Growth Cycle. Sensors, 2010, 10, 6980-7001. | 3.8 | 7 |
| 78 | Evaluation of radar vegetation indices for vegetation water content estimation using data from a ground-based SMAP simulator. , 2015, , . | | 7 |
| 79 | Development of a coherent bistatic vegetation model for signal of opportunity applications at VHF/UHF-bands. , 2017, , . | | 7 |
| 80 | Microwave soil moisture estimation in humid and semiarid watersheds. Advances in Space Research, 1993, 13, 115-118. | 2.6 | 6 |
| 81 | L-band active / passive time series measurements over a growing season using the ComRAD ground-based SMAP simulator. , 2013, , . | | 6 |
| 82 | Thermal Hydraulic Disaggregation of SMAP Soil Moisture Over the Continental United States. IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing, 2022, 15, 4072-4092. | 4.9 | 6 |
| 83 | Hydros Soil Moisture Retrieval Algorithms: Status and Relevance to Future Missions. , 2006, , . | | 5 |
| 84 | A physical model for microwave radiometry of forest canopies. , 2009, , . | | 4 |
| 85 | Seasonal parameterizations of the tau-omega model using the ComRAD ground-based SMAP simulator. , 2014, , . | | 4 |
| 86 | Comparison of soil dielectric mixing models for soil moisture retrieval using SMAP brightness temperature over croplands in India. Journal of Hydrology, 2021, 602, 126673. | 5.4 | 4 |
| 87 | Microwave soil moisture retrieval under trees using a modified tau-omega model. , 2009, , . | | 3 |
| 88 | Chracterization of forest opacity using multi-angular emssion and backscatter data. , 2010, , . | | 3 |
| 89 | Utilization of ancillary data sets for SMAP algorithm development and product generation. , 2011, , . | | 3 |
| 90 | NASA Soil Moisture Active Passive mission status and science performance. , 2016, , . | | 3 |

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| 91 | SMAP Validation Experiment 2019â€“2022 (SMAPVEX19-22): Detection of Soil Moisture Under Temperate Forest Canopy. , 2021, , . | | 3 |
| 92 | The Next Generation of L Band Radiometry: User'S Requirements and Technical Solutions. , 2020, , . | | 3 |
| 93 | Evaluation of Potential Error Sources for Soil Moisture Retrieval from Satellite Microwave Radiometer. , 2006, , . | | 2 |
| 94 | Microwave Soil Moisture Retrieval Under Trees. , 2008, , . | | 2 |
| 95 | Evaluation of SMAP level 2 soil moisture algorithms using SMOS data. , 2011, , . | | 2 |
| 96 | The Soil Moisture Active Passive (SMAP) applications activity. , 2011, , . | | 2 |
| 97 | Physics-Based Retrieval of Surface Roughness Parameters for Bare Soils from Combined Active-Passive Microwave Signatures. , 2018, , . | | 2 |
| 98 | Simultaneous Retrieval of Surface Roughness Parameters for Bare Soils From Combined Activeâ€“Passive Microwave SMAP Observations. IEEE Transactions on Geoscience and Remote Sensing, 2021, 59, 8182-8194. | 6.3 | 2 |
| 99 | Active/Passive Remote Sensing of a Mature Soybean Canopy at L-band. , 2021, , . | | 2 |
| 100 | NASA's Soil Moisture Active Passive (SMAP) Mission and Opportunities For Applications Users. Bulletin of the American Meteorological Society, 0, , 130121120822004. | 3.3 | 2 |
| 101 | Fostering applications opportunities for the NASA Soil Moisture Active Passive (SMAP) Mission. , 2010, , . | | 1 |
| 102 | Effective albedo of vegetated terrain at L-band. , 2012, , . | | 1 |
| 103 | Soil moisture retrieval with airborne PALS instrument over agricultural areas in SMAPVEX16. , 2017, , . | | 1 |
| 104 | SMAP Validation Experiment 2019â€“2021 (SMAPVEX19-21): Detection of Soil Moisture under Forest Canopy. , 2020, , . | | 1 |
| 105 | Deriving soil moisture with the combined L-band radar and radiometer measurements. , 2010, , . | | 0 |
| 106 | Effective tree scattering at L-band. , 2011, , . | | 0 |
| 107 | L-band H polarized microwave emission during the corn growth cycle. , 2011, , . | | 0 |
| 108 | Passive L-band H polarized microwave emission during the corn growth cycle. , 2011, , . | | 0 |

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| 109 | Backscatter measurements over vegetation by ground-based microwave radars. , 2011, , . | | 0 |
| 110 | First application of regression analysis to retrieve Soil Moisture from SMAP brightness temperature observations consistent with SMOS. , 2016, , . | | 0 |
| 111 | Multi-frequency investigation into scattering from vegetation over the growth cycle. , 2016, , . | | 0 |
| 112 | Nasa soil moisture active passive mission status and science highlights. , 2017, , . | | 0 |
| 113 | Smap Mission Status, New Products and Extended-Phase Goals. , 2018, , . | | 0 |
| 114 | Polarization Decomposition and Temperature Bias Resolution for Smap Passive Soil Moisture Retrieval Using Time Series Brightness Temperature Observations. , 2018, , . | | 0 |
| 115 | SMAP Mission Status and Plan. , 2020, , . | | 0 |