

Dr. Iraklis Giannakis

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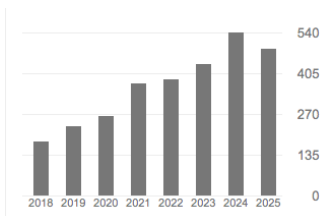
Iraklis Giannakis

Citations

3010 citations from 2014

h-index: 25

i10-index: 41



Personal Statement

Bullerwell Lecturer for 2024. The Bullerwell Lecturer is an annual award from the British Geophysical Association (BGA) bestowed on an individual for significant contribution to the field of Geophysics. Wikipedia: Bullerwell Lecture.

A multidisciplinary early career academic with an established publication record and a wide range of experience in computational physics, geophysics, data science, machine learning, AI, and planetary science. A prolific author with ≈ 100 publications and approximately 3000 citations since 2014. Involved in numerous projects related to planetary science, environmental and urban geophysics, machine learning and computational geophysics, funded by (amongst others) Google, Royal Society and DSTL.

Recipient of the best paper award (main author) at the *15th International Conference on Ground Penetrating Radar* held in Brussels at 2014. He has also been awarded for the best paper and best poster award as a co-author at the *11th International Workshop on Advanced Ground Penetrating Radar*. His work on the applications on near surface geophysics in forestry and arboriculture has been selected to be presented at *STEM for Britain 2020* held at The House of Parliament in London.

Press Releases - Publicity

The links below are press releases and articles in popular news outlets discussing my research:

- The Independent
- The Conversation
- phys.org
- Newsbreak
- Copernical
- Labroots
- University of Edinburgh
- University of Aberdeen

Funding

2025 Google Summer of Code

Successful Proposal

Co-Investigator

In collaboration with Prof Giannopoulos from *The University of Edinburgh* and Dr Warren from *Northumbria University*.

Title: Google Summer of Code 2025 - gprMax an Open-Source Electromagnetic Simulator.

2024 Google Summer of Code

Successful Proposal

Co-Investigator

In collaboration with Prof Giannopoulos from *The University of Edinburgh* and Dr Warren from *Northumbria University*.

Title: Google Summer of Code 2024 - gprMax an Open-Source Electromagnetic Simulator.

2023 **Royal Society of Edinburgh** Successful Proposal
Principal-Investigator

In collaboration with Prof Giannopoulos from *The University of Edinburgh* and Dr Warren from *Northumbria University*.

Title: "A Machine Learning Based Open-Source Clutter Simulator for Planetary Radar".

2023 **eCSE ARCHER2** Successful Proposal
Co-Investigator

In collaboration with Prof Giannopoulos from *The University of Edinburgh* and Dr Warren from *Northumbria University*.

Title: Large-Scale Open-Source Computational Electrodynamics: MPI Domain Decomposition for gprMax.

2023 **Google Summer of Code** Successful Proposal
Co-Investigator

In collaboration with Prof Giannopoulos from *The University of Edinburgh* and Dr Warren from *Northumbria University*.

Title: Google Summer of Code 2023 - gprMax an Open-Source Electromagnetic Simulator.

2022 **Pump Prime Award** Successful Proposal
Principal Investigator

Title: Planetary Radar: A Complete Toolbox for Advanced Numerical Modelling, Signal Processing and Interpretation.

2021 **International Exchanges 2021 Cost Share (NSFC)** Successful Proposal
Principal Investigator

In collaboration with Dr Zhou from *Chinese University of Geosciences (Wuhan)*.

Title: Ground-Penetrating Radar for Reinforced Concrete Inspection Using Machine Learning.

2021 **Google Summer of Code** Successful Proposal
Co-Investigator

In collaboration with Prof Giannopoulos from *The University of Edinburgh* and Dr Warren from *Northumbria University*.

Title: Google Summer of Code 2021 - gprMax an Open-Source Electromagnetic Simulator.

Awards

2024 **Bullerwell Lecturer** British Geophysical Association
Annual award from the British Geophysical Association (BGA) bestowed on an individual for significant contribution to the field of geophysics.

2021 **Best Paper Award (Co-author)** 11th International Workshop on Advanced Ground Penetrating Radar
Awarded to the best paper submitted by an early researcher at the *11th International Workshop on Advanced Ground Penetrating Radar*.

2021 **Best Poster Award (Co-author)** 11th International Workshop on Advanced Ground Penetrating Radar

Awarded to the best poster presented by an early researcher at the *11th International Workshop on Advanced Ground Penetrating Radar*.

- 2020 **STEM for Britain (First Author)**Parliamentary and Scientific Committee, United Kingdom
My work on diagnosing infectious diseases in trees using near surface geophysics and remote sensing was selected to be presented at *STEM for Britain 2020*, hosted at the house of parliament in London, United Kingdom.
- 2015 **Shortlisted for the R. W. P. King Award (First Author)**IEEE Tran. on Ant. and Prop.
The R. W. P. King award is given to an author under 35 years of age for the best paper published in *IEEE Transactions on Antennas and Propagation*.
- 2014 **Best Paper Award (First Author)**15th International Conference on GPR
Awarded to the best paper submitted by an early researcher at the *15th International Conference on Ground Penetrating Radar 2014*.
- 2012 **Shortlisted, Best Paper Oral Presentation (First Author)**14th International Conference on Ground Penetrating Radar
My paper was amongst the seven papers nominated for the best paper oral presentation during the *14th International Conference on Ground Penetrating Radar 2012*.
- 2008 **Best Undergraduate Diploma Thesis**School of Geology, Aristotle University of Thessaloniki
Awarded to the best diploma thesis submitted to the Department of Geophysics (School of Geology) of Aristotle University of Thessaloniki, Greece. Title of the thesis "Computer Software for Calculating the Jacobian Matrix for Electrical Resistivity Tomography".

Education

- 2011–2015 **PhD** in Computational GeophysicsThe University of Edinburgh
PhD Thesis Title:
Realistic Numerical Modelling of Ground Penetrating Radar for Landmine detection.
Supervisor: Prof. Antonios Giannopoulos.
EPSRC case award, Defence Science and Technology Laboratory (Dstl).
- 2009–2011 **MSc** in GeophysicsAristotle University of Thessaloniki
Master Thesis Title:
Error Analysis Due to Deviations of Geometry in Cross-hole Electrical Resistivity Tomography.
Supervisor: Prof. Panagiotis Tsourlos.
Specialisation in Applied Geophysics (with Distinction, 9.4/10).
- 2004–2009 **BSc** in GeophysicsAristotle University of Thessaloniki
Diploma Thesis Title:
Computer Software for Calculating the Jacobian Matrix for Electrical Resistivity Tomography.
Supervisor: Prof. Panagiotis Tsourlos.
Specialisation in Geophysics (7.53/10).

Experience

- 2025-present **State Key Laboratory of Lunar and Planetary Sciences** MUST
Associate Professor
- 2025-present **University of Aberdeen** School of Geosciences
Honorary Assistant Professor
- 2020-2025 **University of Aberdeen** School of Geosciences
Assistant Professor:
- Course leader of “*Time Series Analysis and Inversion Theory*” and “*Machine Learning in Geophysics*” for the MSc in Geophysics. Delivering guest lecture series on “*Introduction to Matlab*”, “*Introduction to Ground Penetrating Radar*”, “*Civil Engineering Applications of Near Surface Geophysics*” and “*Planetary Applications of Ground-Penetrating Radar*”.
 - Course leader for the “*Projects in MSc in Geophysics*”, and “*Projects in MSc in Petroleum Data Management*”.
 - Director of the MSc in Petroleum Data Management.
 - Go Abroad Tutor responsible for all the Erasmus and Exchange students.
 - Responsible for the scholarships received from The Data Lab for the MSc in Geophysics.
- 2020-present **Intelligent Electromagnetics** Intellem
Director:
A consultancy company that provides services related to machine learning and computational electrodynamics. Intellem Website.
- 2018-2020 **University of West London** School of Computing and Engineering
Lecturer/Research Fellow:
- Conducting research on signal processing and machine learning for near-surface geophysics with applications to civil and environmental engineering.
 - Course leader for the modules “*Multivariable Calculus*” and “*Numerical Analysis*” for the course of Mathematics and Statistics.
 - Responsible for the Math Cafe, an informal meeting place within UWL for math-enthusiasts.
 - Supervisor to under/post-graduate projects related to non-destructive testing and near-surface geophysics with applications to civil engineering and environmental sciences.
- Supervisor:* Prof. Amir Alani.
- 2017-2018 **The University of Edinburgh** School of Engineering
Postdoctoral Researcher:
Project: Working for Minimum Intrusion Surface Technology (MIST). A project funded by Google fiber focused on machine learning and numerical analysis to non-destructive testing and near surface geophysics.
Supervisor: Prof. Antonios Giannopoulos.
- 2016-2017 **Greek Army Research and Technology Centre** Hellenic Army
National Obligatory Military Service
- 2015-2016 **Delft University of Technology** Department of Microelectronics
Postdoctoral Researcher:
Working for *D-box*, a European project aimed at creating a coherent and inclusive framework for landmine detection. My work was focused on applications of

machine learning and signal processing for predicting the performance of ground-penetrating radar on various types of scenarios.

Supervisor: Prof. Alexander Yarovoy.

2014 **Roma Tre University**

School of Electrical Engineering

Visiting Researcher:

I was a visiting researcher as a member of the COST action (TU1208) focusing on computational electrodynamics and its applications to highway engineering.

Supervisor: Prof. Lara Pajewski.

2012-2013 **The University of Edinburgh**

School of Engineering

Tutor and Lab demonstrator:

Worked as tutor and lab demonstrator for the undergraduate courses "Introduction to programming" and "Numerical methods and computing 2" in the Civil Engineering discipline.

2008-2010 **Aristotle University of Thessaloniki**

School of Geology

Field geophysicist:

Worked in numerous geophysical surveys utilising the whole spectrum of exploration geophysics (seismics, GPR, ERT, SP, VLF, potential methods) for archaeological, engineering, environmental and geological applications.

2008 **Institute of geological and mineral exploration of Greece**

IGME

Geologist:

Final year practice-internship as part of my bachelor at the Aristotle University of Thessaloniki, School of Geology. My work at IGME was focused on geochemistry analysis and minerology.

Teaching Experience

- **Machine Learning in Geophysics** - Course Leader
University of Aberdeen
- **Time Series Analysis and Inversion Theory** - Course Leader
University of Aberdeen
- **Applications of Near Surface Geophysics in Civil and Environmental Engineering** - Guest Lecture Series
University of Aberdeen
- **Fieldwork: Applied Geophysics** - Co-ordinator
University of Aberdeen
- **Planetary Applications of Ground Penetrating Radar** - Guest Lecture Series
University of Aberdeen
- **Introduction to Ground Penetrating Radar** - Guest Lecture Series
University of Aberdeen
- **Projects for the MSc in Geophysics** - Course Leader
University of Aberdeen
- **Projects for the MSc in Petroleum Data Management** - Course Leader
University of Aberdeen
- **Introduction to Programming** - Induction Week
University of Aberdeen

- **Mathematical Prerequisites** - Induction Week
University of Aberdeen
- **Multivariable Calculus** - Course Leader
University of West London
- **Numerical Analysis** - Course Leader
University of West London
- **Numerical Methods and Computing** - Lab Demonstrator
The University of Edinburgh
- **Introduction to Coding** - Lab Demonstrator
The University of Edinburgh

Invited Talks

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| 2025 | Macau University of Science and Technology, State Key Laboratory
<i>Title : Exploring the far side of the Moon using Radar.</i> | Macau |
| 2024 | Chinese Academy of Sciences, Nat. Astr. Observatories
<i>Title : Exploring the far side of the Moon using Radar.</i> | Beijing, China |
| 2024 | The University of Edinburgh
<i>Title : Exploring the far side of the Moon using Radar.</i> | Edinburgh, UK |
| 2024 | Imperial College
<i>Title : Exploring the far side of the Moon using Radar.</i> | London, UK |
| 2024 | Leeds University
<i>Title : Exploring the far side of the Moon using Radar.</i> | Leeds, UK |
| 2024 | Northumbria University
<i>Title : Exploring the far side of the Moon using Radar.</i> | Northumbria, UK |
| 2024 | Aalto University
<i>Title : Exploring the far side of the Moon using Radar.</i> | Helsinki, Finland |
| 2023 | China University of Geoscience (Wuhan)
<i>Title : Machine Learning in Urban Geophysics Using Synthetic Numerical Data</i> | Wuhan, China |
| 2022 | STEM for Britain, House of Parliament
<i>Title : Near Surface Geophysics in Forestry and Arboriculture</i> | London, UK |
| 2019 | London Tree Officers Association (LTOA) Meeting
<i>Title : Applications of Near Surface Geophysics in Forestry and Arboriculture.</i> | London, UK |

Academic and Professional Activities

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| 2025 | IEEE IWAGPR 2025
Chair for the Session "Artificial Intelligence and GPR". | Thessaloniki, Greece |
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- 2025 **IEEE IWAGPR 2025** Thessaloniki, Greece
Scientific Committee.
- 2024 **IEEE Senior Member** IEEE
Senior Member is the highest professional grade of IEEE for which a member may apply. It requires extensive experience, and reflects professional accomplishment and maturity. Only 10% of the more than 400,000 IEEE members have achieved this level.
- 2024 **IEEE IGARSS 2025** Brisbane, Australia
Scientific Committee for Data Analysis Image Segmentation and Inversion Techniques; Remote Sensing of Planetary and other Celestial Bodies; Ground Penetrating Radar.
- 2024 **20th International Conference on Ground Penetrating radar** Jilin, China
Co-organise a workshop with more than 100 people.
- 2024 **Near Surface Geophysics** Journal
Associate Editor.
- 2022 **Suncor energy** Aberdeen, UK
Co-organise a workshop related to machine learning and python.
- 2019 **London Tree Officers Association (LTOA) Meeting** London, UK
Co-organise one of the four annual meetings of LTOA, hosted at University of West London.
- 2017 **9th Int.l Work. on Advanced Ground Penetrating Radar** Edinburgh, UK
Chair of the session: Forward Modelling and Inversion.

Publications

News Outlets

Giannakis, I., “What We Discovered on the Far Side of the Moon,” *The Independent*, 2021.

Giannakis, I., “What We Discovered on the Far Side of the Moon,” *The Conversation*, 2021.

Media and Online Contributions

Giannakis, I., “ChatGPT and LLMs for Lithology Prediction - AI Petrophysicist,” Link, 2024.

Giannakis, I., ”GprMax Deep Learning Challenge 1 (GDLC-1),” Kaggle Competition, 2024.

Giannakis, I., Warren, C., Giannopoulos, A., Leontidis, G., Su, Y., Zhou, F., Martin-Torres, J., Diamanti, N., ”Investigating the Capabilities of Deep Learning for Processing and Interpreting One-Shot Multi-offset GPR Data: A Numerical Case Study for Lunar and Martian Environments”, **arXiv:2410.14386**, 2024.

Journal Papers

36 Journals from 2014-2024

35 Journals with Q1-Factor and 1 with Q2-Factor

17 First-Authorships

Cai, Q., Zhou, F., **Giannakis, I.**, Liu, S., Hu, X., "Predicting Martian Regolith Permittivity Using Deep Learning methods - Revisiting Southern Utopia Planitia," *IEEE Geoscience and Remote Sensing Letters*, Early Access, 2025.

Giannakis, I., McDonald, C., Feng, J., Zhou, F., Su, Y., Martin-Torres, J., Zorzano, M-P., Warren, C., Giannopoulos, A., Leontidis, G., "Automatic Segmentation of Radar Data from the Chang'E-4 Mission Using Unsupervised Machine Learning: A Data-Driven Interpretation Approach," *Icarus*, 2024. Rank: Q1

Giannakis, I., Bhardwaj, A., Sam, L., Leontidis, G., "A Flexible Deep Learning Crater Detection Scheme Using Segment Anything Model (SAM)," *Icarus*, 2024. Rank: Q1

Huang, J., Yang, X., Zhou, F., Li, X., Zhou, B., Lu, S., Ivashov, S., **Giannakis, I.**, Kong, F., Slob, E., "A deep learning framework based on improved selfsupervised learning for ground-penetrating radar tunnel lining inspection," *Computer-Aided Civil and Infrastructure Engineering*, 2024. Rank: Q1

Giannakis, I., Feng, J., Zhou, F., Su, Y., Martin-Torres, J., Zorzano, M-P., Warren, C., Giannopoulos, A., "Evidence of Shallow Basaltic Lava Layers in Von Kármán Crater From YUTU-2 Lunar Penetrating Radar," *Icarus*, 2024. Rank: Q1

Giannakis, I., Zhou, F., Warren, C., Giannopoulos, A., "On the Limitations of Hyperbola Fitting for Estimating the Radius of Cylindrical Targets in non-destructive Testing and Utility Detection," *IEEE Geoscience and Remote Sensing Letters*, 2023. Rank: Q1

Patsia, O., Giannopoulos, A., **Giannakis, I.**, "GPR Full-Waveform Inversion with Deep-Learning Forward Modelling: A Case Study from Non-Destructive Testing," *IEEE Transactions on Geoscience and Remote Sensing*, 2023.

Patsia, O., Giannopoulos, A., **Giannakis, I.**, "Background Removal, Velocity Estimation, and Reverse-Time Migration: A Complete GPR Processing Pipeline Based on Machine Learning," *IEEE Transactions on Geoscience and Remote Sensing*, 2023. Rank: Q1

Zhou, F., **Giannakis, I.**, Giannopoulos, A., Holliger, K., Slob, E., "Extracting Mud Invasion Information Using Borehole Radar – A Numerical Study," *Geophysics*, 2023. Rank: Q1

Mansilla, F., Zorzano, MP., **Giannakis, I.**, Ruiz, J., "Unveiling the Subsurface of Late Amazonian Lava Flows at Echus Chasma, on Mars," *Remote Sensing*, 2023. Rank: Q1

Patsia, O., Giannopoulos, A., **Giannakis, I.**, "Developing a Realistic Numerical Equivalent of a GPR Antenna Transducer Using Global Optimisers," *Near Surface Geophysics*, 2023.

Fang, F., Ding, C., Feng, J., Su, Y., Sharma, R., **Giannakis, I.**, "In-Situ Radar Observation of Shallow Lunar Regolith at the Chang'E-5 Landing Site: Research Progress and Perspectives," *Remote Sensing*, 2023.

Feng, J., Siegler, MA., Su, Y., Ding, C., **Giannakis, I.**, "Layered Structure in the Upper Several Hundred Meters of the moon Along the Chang'E-4 Rover's first 1000-m Traverse," *Journal of Geophysical Research: Planets*, 2023.

Giannakis, I., Martin-Torres, J., Zorzano, M-P, Su, Y., Warren, C., Giannopoulos, A., "Stochastic Hyperbola Fitting, Probabilistic Inversion, Reverse-Time Migration and Clustering: A Complete Interpretation Toolbox for In-Situ Planetary Radar," *Icarus*, 2023. *Rank: Q1*

Li, X., Liu, H., Zhou, F., Chen, Z., **Giannakis, I.**, Slob, E., "Deep Learning-Based non-destructive Evaluation of Reinforcement Bars Using Ground-Penetrating Radar and Electromagnetic Induction Data," *ComputerAided Civil and Infrastructure Engineering*, 2022 *Rank: Q1*

Giannakis, I., Zhou, F., Warren, C., Giannopoulos, A., "A Novel Interpretation Tool for Inferring the Electric Permittivity of the Shallow Lunar Regolith: A Case Study at the Chang'E-4 Landing Site," *Geophysical Research Letters*, Accepted for Publication, Early Access Available Online, 2021. *Rank: Q1*

Tosti, F., Gennarelli, G., Lantini, L., Catapano, I., Soldovieri, F., **Giannakis, I.**, Alani, A. M., "The Use of GPR and Microwave Tomography for the Assessment of the Internal Structure of Hollow Trees," *IEEE Transactions on Geoscience and Remote Sensing*, Accepted for Publication, Early Access Available Online, 2021. *Rank: Q1*

Zadhoush, H., Giannopoulos, A., **Giannakis, I.**, "Optimizing the Complex Refractive Index Model for Estimating the Permittivity of Heterogeneous Concrete Models," *Remote Sensing*, vol. 13, no. 723, 2021. *Rank: Q1*

Giannakis, I., Warren, C, Giannopoulos, A., Sofroniou, A., "Fractal-Constrained Crosshole/Borehole-to-Surface Full Waveform Inversion for Hydrogeological Applications Using Ground-Penetrating Radar," *IEEE Transactions on Geoscience and Remote Sensing*, Accepted, in Press, 2021. *Rank: Q1*

Giannakis, I., Warren, C, Giannopoulos, A., "A Machine Learning Framework For Estimating the Diameter of Reinforcing Bars Using Ground-Penetrating Radar," *IEEE Geoscience and Remote Sensing Letters*, Early Access Available, 2020. *Rank: Q1*

Zhou, F., **Giannakis, I.**, Giannopoulos, A., Hollinger, K. and Slob, E., "Estimating Reservoir Permeability using borehole radar," *Geophysics*, vol. 85, pp. H51-H60, 2020. *Rank: Q1*

Giannakis, I. Tosti, F., Lanting, L. and Alani, A., "Diagnosing Emerging Infectious Diseases of Trees Using Ground Penetrating Radar," *IEEE Transactions on Geoscience and Remote Sensing*, vol. 58, pp. 1146-1155, 2020. *Rank: Q1*

Zhou, L., Wang, Y., **Giannakis, I.**, Tosti, F., Alani. A., Motoyuki, S., "3D Mapping and Assessment of Tree Roots using Ground Penetrating Radar with Low-Cost GPS," *Remote Sensing*, 12, 2020. *Rank: Q1*

Lantini, L. Tosti, F., **Giannakis, I.**, Zou, L. Benedetto, A., Alani, A. M. "An Enhanced Data Processing Framework for Mapping Tree Root Systems Using Ground Penetrating Radar," *Remote Sens.* 12, 2020. *Rank: Q1*

Alani, A., **Giannakis, I.**, Zou, L., Lanting, L. and Tosti F., "Reverse-Time Migration for Evaluating the Internal Structure of Tree Trunks Using Ground-Penetrating Radar," *NDT & E International*, vol. 115, 2020.

Rank: Q1

Giannakis, I., Tsourlos, P., Papazachos, C., Vargemezis, G., Giannopoulos, A., Papadopoulos, N., Tosti, F., Alani, A., "A Hybrid Optimization Scheme for Self-Potential Measurements Due to Multiple Sheet-like Bodies in Arbitrary 2D Resistivity Distributions," *Geophysical Prospecting*, vol. 67, pp. 1948-1964, 2019.

Rank: Q2

Giannakis, I., Giannopoulos, A., Warren, C. "A Machine Learning Based Fast Forward Solver for Ground Penetrating Radar with Application to Full Waveform Inversion," *IEEE Transactions on Geoscience and Remote Sensing*, volume 57, pages 8317-8326, 2019.

Rank: Q1

Giannakis, I., Giannopoulos, A., Warren, C. "Realistic FDTD GPR Antenna Models Optimized Using a Novel Linear/Nonlinear Full-Waveform Inversion," *IEEE Transactions on Geoscience and Remote Sensing*, volume 57, pages 1768-1778, 2019

Rank: Q1

Giannakis, I., Lanting, L., Tosti, F., Alani, A., "Health Monitoring of Tree Trunks Using Ground Penetrating Radar," *IEEE Transactions on Geoscience and Remote Sensing*, volume 57, pages 8317-8326, 2019.

Rank: Q1

Warren, C., Giannopoulos, A., **Giannakis, I.**, Gray, A., Patterson, A., Wetter, L. and Hamrah, A., "A CUDA-Based GPU Engine for gprMax: Open Source FDTD electromagnetic simulation software," *Computer Physics Communication*, volume 237, pages 208-218, 2019

Rank: Q1

Alani, A., Soldovieri, F., Catapano, I. **Giannakis, I.** Gennareli, G., Lantini, L., Ludeno, G. and Tosti, F., "The Use of Ground Penetrating Radar and Microwave Tomography for the Detection of Decay and Cavities in Tree Trunks." *Remote Sensing*, 2019.

Rank: Q1

Giannakis, I., Giannopoulos, A., Warren, C., Davidson, N., "A Realistic FDTD Numerical Modelling Framework of Ground Penetrating Radar for Landmine Detection," *IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing*, volume 9, number 99, pages 37-51, 2016.

Rank: Q1

Warren, C., Giannopoulos, A., **Giannakis, I.**, "gprMax: Free Software to Simulate Electromagnetic Wave Propagation for Ground Penetrating Radar", *Computer Physics Communications*, volume 209, pages 163-170, 2016.

Rank: Q1

Giannakis, I., Giannopoulos, A., Yarovoy, A., "A Model-Based Evaluation of Signal to Clutter Ratio For Landmine Detection Using Ground Penetrating Radar," *IEEE Transactions on Geoscience and Remote Sensing*, volume 54, pages 3564-3573, 2016.

Rank: Q1

Giannakis, I., Giannopoulos, A., "Time-Synchronised Convolutional Perfectly Matched Layer for Improved Absorbing Performance in FDTD," *IEEE Antennas and Wireless Propagation Letters*, volume 14, pages 690-693, 2015.

Rank: Q1

Giannakis, I., Giannopoulos, A., "A Novel Piecewise Linear Recursive Convolution Approach for Dispersive Media Using the Finite-Difference Time-Domain Method," *IEEE Transactions on Anten-*

nas and Propagation, volume 62, number 5, pages 2669-2678, May 2014.
Rank: Q1

Peer-reviewed conference papers

More than 60 Conference Papers

24 First-Authorships

For more detailed info check My Google Scholar Page.