CURRICULUM VITAE AND LIST OF PUBLICATIONS

Personal Details

Name: Yuval Reuveni

Date and place of Birth: September 7, 1976. Israel. Regular

military service: October 1994 – October 1997.

Address and telephone number at work: Science Park, Ariel, +972-525970648

Address and telephone number at home: HaMa'alot 9, Herzeliya, 03-5442306.

Education

Undergraduate and Graduate Studies

Ph.D.   2005-2011. Tel-Aviv University. Geophysics and Planetary sciences. Name of advisor: Prof. Colin Price. Title of thesis: "Observation and Modeling of Natural and Anthropogenic VLF Electromagnetic Noise in Israel".

M.Sc.   2002-2005. Tel-Aviv University. Geophysics and Planetary Sciences. Name of advisors: Prof. Eyal Heifetz and Prof. Alexander Gelfgat. Title of thesis: "Normal and Non-Normal Growth in Kelvin Helmholtz Shear Flow".

B.Sc.   1999-2002. Tel-Aviv University. Geophysics and Planetary Sciences.

Post-Doctoral Studies

2013-2014   Post-Doctoral Research Associate. The Institute of Geophysics and Planetary Physics, Scripps Institution of Oceanography, UC San Diego.

2011-2013   Caltech Post-Doctoral Research Associate. NASA-Jet Propulsion Laboratory.

Academic Ranks and Tenure in Institutes of Higher Education

(in <u>descending</u> chronological order, including sabbatical leave)

2019-present   Senior Lecturer at Ariel University.

2015-2019   Lecturer at Ariel University.

Professional Activities

(in descending chronological order)

Membership in professional/scientific societies

2020-To date   International Union of Radio Science. Official Israel representative for commission G (Ionospheric Radio and Propagation (including ionospheric communications and remote sensing of ionized media).

2020-To data   International Union of Radio Science, Senior member.

2015-To date   European COST action ES1206 (GNSS4SWEC) Management Committee (MC) member.

2006-To date   AGU member.

2006-2010   ILAN (Imaging of Lightning and Nocturnal Flashes) science team member.

Educational activities

Courses taught in Recent Years

2021-2022   Electricity and magnetism for industrial engineering and management, Ariel University.

2017-2022 1st year physics lab.

2019 3rd year physics lab.

Awards, Citations, Honors, Fellowships

Honors, Citation Awards (including during studies)

2009   Department of Geophysics and Planetary Sciences scholarship for Ph.D. excellence studies achievements.

2007   PSES (Porter School of Environmental Studies) research grant award for excellent students.

2006   COST-18 Young-Scientist Short-Term Scientific Missions (STSM) research grant award for excellent students.

Fellowships (e.g. Fullbright)

2011-2013   Caltech Postdoctoral Fellowship.

Scientific Publications

Title in original language and translation into English. Suggested formats follow; this order is not essential, but all information should be included and consistent. The entries in each category should be numbered separately.
Only **two categories** of publications are recognized:
Published − articles that have already been published, complete bibliographical information is available.
Accepted − refereeing process has been completed and unconditional acceptance letter from the editor has been received, with expected date of publication.

Authored Books

1.   Gozlan, K., Y. Reuveni, K. Cohen, E. Berliner and B. Ben-Moshe (2018), "Cost Effective Platforms for Near Space Research and Experiments", *Space Flight*, ISBN 978-953-51-5839-4, InTechOpen. Citation number: 2.

Theses

1.   Reuveni, Y. (2005), "Normal and Non-Normal Growth in Kelvin Helmholtz Shear Flow", *M.Sc. Thesis*. (Under the supervision of Eyal Heifetz, and Alexander Gelfgat).

2.   Reuveni, Y. (2010), "Observation and Modeling of Natural and Anthropogenic VLF Electromagnetic Noise in Israel", *Ph.D. Thesis*. (Under the supervision of Colin Price).

Citation Index

H-index (Google Scholar): 9

Total number of citations of all articles (Google Scholar): 218

Articles

Refereed articles and refereed letters in scientific journals, running numbers

Names of all authors (in the same order they appear in the publications), Year, Title of article, Name of journal, Volume number, Pages (inclusive), (Citations, journal impact factor (IF), journal ranking (JR, e.g., 13/87), quartile (Q1, etc.).

1. Heifetz, E, Y. Reuveni, A. Gelfgat, E. Kit, and J. Mathven (2006), "The counter propagating Rossby wave perspective on Kelvin Helmholtz instability as s limiting casa of a Rayleigh shear layer with zero width", *Physics of Fluids,* 18(1). IF: 4.98, Citation number: 8. JR: 2/34. Q1.

2. Reuveni, Y., and C. Price (2009), "A new approach for monitoring the 27-day solar rotation using VLF radio signals on the Earth's surface", *J. Geophys. Res.*, Space Physics, 114(A10). IF: 3.318, Citation number: 11. JR: 27/184. Q1.

3. Reuveni, Y., C. Price, E. Greenberg, and A. Shuval (2010), "Natural atmospheric noise statistics from VLF measurements in the eastern Mediterranean", *Radio Sci.,* 45(5). IF: 1.678, Citation number: 10. JR: 59/87. Q3.

4. Reuveni, Y., C. Price, Y. Yair, and R. Yaniv (2011), "The connection between meteors shower and VLF atmospheric noise signals", *J. Atmospheric Electricity*, 31(1). IF: 1.417, Citation number: 5. 59/94. Q3.

5. Reuveni, Y., S. Kedar, S. E. Owen, A. W. Moore, and F. H.Webb (2012), "Improving sub- daily strain estimates using GPS measurements", *Geophys. Res. Lett*., 39(11). IF: 5.576, Citation number: 21. 26/245. Q1.

6. Reuveni, Y., S. Kedar, S. E. Owen, A. W. Moore, and F. H.Webb (2014), "Analyzing slip events along the Cascadia margin using an improved sub-daily GPS analysis strategy", *Geophys. J. Int*., 198(3). IF: 3.352, Citation number: 13. 35/87. Q2.

7. Elhalel, G., Y. Yair, Keri Nicoll, C. Price, Y. Reuveni, and G.Harrison (2014), "Influence of Short Term Solar Disturbances on Fair Weather Condition Current", *J. Space Weather Space Clim.,* 4(A26). IF: 3.095, Citation number: 23. 30/69. Q2.

8. Reuveni, Y., Y. Bock, X. Tong, and A. W. Moore (2015), "Calibrating Interferometric Synthetic Aperture Radar (InSAR) Images with Regional GPS Network Atmosphere Models", *Geophys. J. Int*., 202(3). IF: 3.095, Citation number: 21. 35/87. Q2.

9. Leontiev, A., Y. Reuveni (2017), "Combining METEOSAT-10 satellite image data with GPS tropospheric path delays to estimate regional Integrated Water Vapor (IWV) distribution", *Atmos.Meas. Tech*., 10, 537-548, doi:10.5194/amt-10-537-2017, 2017. IF:4.184, Citation number: 9. 40/94. Q2.

10. Reuveni, Y, Y. Yair, C. Price, G. Steinitz, (2017), "Ground level gamma-ray and electric field Enhancements during disturbed weather: combined signatures from convective

clouds, lightning and rain", *Atmospheric Research,* 196, 142-150, doi.org/10.1016/j.atmosres.2017.06.012. IF: 5.965, Citation number: 17. 18/94. Q1.

11.   Inbar N., Y. Reuveni, S. Agibayev, Y. Anker and J. Guttman (2017), "A New Approach for Analyzing Continuous Groundwater Physicochemical Measurements Related to Earthquake Precursor Studies". *Judea and Samaria Research Studies*, Vol 26, 377-389. IF: 1.0, Citation number: 0.

12.   Reuveni, Y., E. Dahan, Y. Anker, and M. Sprintsin (2018), "Estimating Forest Parameters Using Landsat ETM+ Spectral Responses and Monocultured Plantation Fieldwork Measurements Data", *International Journal of Remote Sensing*, 39:8, 2620-2636, DOI:10.1080/01431161.2018.1430400. IF: 3.531, Citation number: 4. 11/28. Q2.

13.   Leontiev, A., Y. Reuveni (2018), "Augmenting GPS IWV estimation using spatio-temporal cloud distribution extracted from satellite data", *Scientific Reports*, 8:14785, DOI:10.1038/s41598-018-33163-x. IF: 4.997, Citation number: 7. 19/74. Q2.

Refereed articles and refereed letters in scientific journals since last promotion

14.   Y. Yair, Y. Reuveni, S. Katz, C. Price and R. Yaniv (2019), "Strong electric fields observed during snow storms on Mt. Hermon, Israel", *Atmospheric Research*, 215, 208-213, doi.org/10.1016/j.atmosres.2018.09.009. IF: 5.965, Citation number: 9. 18/94. Q1.

15.   Yaniv R., Y. Reuveni, Y. Yair, and B. Lynn (2019), "Temporal variations of the conduction current density during fair weather days in Israel", *Atmospheric Research*, 222, 1-11, doi.org/10.1016/j.atmosres.2019.02.003. IF: 5.965, Citation number: 4. 18/94. Q1.

16.   Asaly, S. S., Gottlieb, L. A., & Reuveni, Y. (2020). Using Support Vector Machine (SVM) and ionospheric Total Electron Content (TEC) data for solar flare predictions. *IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing*. IF: 4.715, Citation number: 9. 10/50. Q1.

17.   Leontiev, A., Rostkier-Edelstein, D., & Reuveni, Y. (2021). On the potential of improving WRF model forecasts by assimilation of high-resolution GPS-derived water-vapor maps augmented with METEOSAT-11 data. *Remote Sensing*, *13*(1), 96. IF: 5.349, Citation number: 5. 30/202. Q1.

18.   Ziv, S. Z., Yair, Y., Alpert, P., Uzan, L., & Reuveni, Y. (2021). The diurnal variability of precipitable water vapor derived from GPS tropospheric path delays over the Eastern Mediterranean. *Atmospheric Research*, *249*, 105307. IF: 5.965, Citation number: 10. 18/94. Q1.

19.   Ziskin Ziv, S., Alpert, P., & Reuveni, Y. (2021). Long-term variability and trends of precipitable water vapour derived from GPS tropospheric path delays over the Eastern

Mediterranean. *International Journal of Climatology*, 1– 22. https://doi.org/10.1002/joc.7205. IF: 3.651, Citation number: 6. 45/94. Q2.

20.   Landa, V., Shapira, Y., David, M. *et al.* Accurate classification of fresh and charred grape seeds to the varietal level, using machine learning based classification method. *Sci Rep* 11, 13577 (2021). https://doi.org/10.1038/s41598-021-92559-4. IF: 3.998, Citation number: 4. 19/74. Q2

21.   Lynn, B.; Yair, Y.; Levi, Y.; Ziv, S.Z.; Reuveni, Y.; Khain, A. Impacts of Non-Local versus Local Moisture Sources on a Heavy (and Deadly) Rain Event in Israel. *Atmosphere* 2021, *12*, 855. https://doi.org/10.3390/atmos12070855. IF: 3.110, Citation number: 2. 59/94. Q3.

22.   Landa, V., & Reuveni, Y. (2022). Low-dimensional Convolutional Neural Network for Solar Flares GOES Time-series Classification. *The Astrophysical Journal Supplement Series*, *258*(1), 12. IF: 9.2, Citation number: 3. 6/69. Q1.

23.   Asaly, S. S., Gottlieb, L. A., Inbar, N., & Reuveni, Y. (2022). Using Support Vector Machine (SVM) along with GPS ionospheric TEC estimations for potentially predicting earthquake events. *Remote Sensing*, *14*(12), 2822. IF: 5.349, Citation number: 3. 30/202. Q1.

24.   Z. Ziv and Y. Reuveni, "Flash floods prediction using precipitable water vapor derived from GPS tropospheric path delays over the Eastern Mediterranean," in *IEEE Transactions on Geoscience and Remote Sensing*, 2022, doi: 10.1109/TGRS.2022.3201146. IF: 8.125, Citation number: 3. 5/87. Q1.

25.   Landa, V., & Reuveni, Y. (2023). Assessment of Dynamic Mode Decomposition (DMD) Model for Ionospheric TEC Map Predictions. *Remote Sensing*, *15*(2), 365. IF: 5.349, Citation number: 0. 30/202. Q1.

Papers in conferences proceedings

26.   Anker, Y., N. Inbar, A. Y. Dror, Y. Reuveni, J. Guttman, A. Flexer (2015), "Groundwater response to ground movements, as a tool for earthquakes monitoring and a possible precursor", *Advances in Environmental Science and Energy Planning*.

Lectures and Presentations at Meetings and Invited Seminars not Followed by Published Proceedings

1.   EGU General Assembly 2022, Vienna, Austria – "Utilizing machine learning techniques along with GPS ionospheric TEC maps for potentially predicting earthquake events".

2. EGU General Assembly 2022, Vienna, Austria – "Results from Targeted TLE and geomagnetically conjugate observations from the International Space Station during the Rakia mission".

3. AGU 2021 Fall Meeting, San Francisco, CA, USA-"Using Machine Learning Based Methodology with GPS derived Precipitable Water Vapor to Predict Flash Floods in the Eastern Mediterranean Region".

4. AGU 2021 Fall Meeting, San Francisco, CA, USA-"Targeted observations of TLEs and geomagnetically conjugate sprites from the International Space Station during the Rakia mission".

5. EGU General Assembly 2021, Vienna, Austria – "Precipitable water vapor from GPS tropospheric path delays over the Eastern Mediterranean: trends, diurnal and long-term variability".

6. EGU General Assembly 2021, Vienna, Austria – "Enhancing WRF Model Forecasts by Assimilating High-Resolution GPS-Derived Water-Vapor Maps combined with METEOSAT-11 Data".

7. EGU General Assembly 2021, Vienna, Austria – "On the Potential of Multi-Parametric Measurements for Earthquake Precursors Analysis".

8. EGU General Assembly 2020, Vienna, Austria – "Producing solar flare predictions using support vector machine (SVM) applied with ionospheric total electron content (TEC) global maps".

9. EGU General Assembly 2020, Vienna, Austria – "Using 2D integrated water vapor (IWV) maps derived from GPS tropospheric path delays for augmenting Weather Research and Forecast (WRF) model predictions".

10. AGU 2019 Fall Meeting, San Francisco, CA, USA-"Utilizing GOES satellites data for producing solar-flare predictions using deep learning techniques".

11. EGU General Assembly 2019, Vienna, Austria – "Improving GPS-IWV estimations using spatio-temporal cloud distribution extracted from satellite data".

12. COSPAR 2018 42nd Assembly 2018, Pasadena, California – "New strategy for augmenting IWV estimations using remote sensing satellites and GPS tropospheric path delays".

13. EGU General Assembly 2018, Vienna, Austria – "Multi-scale temporal variations of the conduction current density during fair weather days in Israel".

14. EGU General Assembly 2018, Vienna, Austria – "Imaging of lightning and sprites in the shortwave IR (SWIR) with the BGUSAT satellite".

15. EGU General Assembly 2018, Vienna, Austria – "Long duration high- altitude measurements of cosmic-ray ionization using neutral-buoyancy balloons".

16. EGU General Assembly 2018, Vienna, Austria – "Near Real-Time GPS- Meteorology Services".

17. EGU General Assembly 2018, Vienna, Austria – "Correlating pre- seismic Groundwater Electrical Conductivity and tectonics: a step towards earthquake prediction".

18. EGU General Assembly 2017, Vienna, Austria – "Using Groundwater physiochemical properties for assessing potential earthquake precursor".

19. EGU General Assembly 2017, Vienna, Austria – "Near surface gamma- ray and electric field enhancements during disturbed weather: combined signatures from convective clouds, lightning and rain".

20. EGU General Assembly 2017, Vienna, Austria – "Using Meteosat-10 and GPS ZWD measurements for creating regional water vapor maps".

21. The Batsheva De Rothschild Seminar on The Atmospheric Global Electric Circuit (GEC) 2017, Mitzpe Ramon, Israel – "Ground level gamma-ray and electric field measurements during disturbed weather: combined signatures from convective clouds, lightning and rain.

22. AGU 2016 Fall Meeting, San Francisco, CA, USA-"Estimating Integrated Water Vapor (IWV) regional map distribution using METEOSAT satellite data and GPS Zenith Wet Delay (ZWD)".

23. European COST action ES1206 (GNSS4SWEC) 2016 Meeting, Potsdam, Germany-"Combining multi-spectral satellite image data with GPS tropospheric path delays to produce regional Integrated Water Vapor (IWV) maps.

24. EGU General Assembly 2016, Vienna, Austria – "Gamma ray and fair weather electric field measurements during thunderstorms: indications for TGEs?".

25. European COST action ES1206 (GNSS4SWEC) 2016 Meeting, Reykjavik, Iceland-"GPS Integrated Water Vapor Estimations Using Surface temperatures from METEOSAT Satellite Data".

26. IGS 2016 Conference, Eilat, Israel-" Combining radon (222Rn) and fair weather electric field measurements for studying atmospheric electricity and space-weather events".

27. AGU 2015 Fall Meeting, San Francisco, CA, USA-"Using Regional GPS Network Atmospheric Models for Mitigating Errors in Interferometric Synthetic Aperture Radar (InSAR) Images".

28. AGU 2015 Fall Meeting, San Francisco, CA, USA-"Utilizing online monitoring of water wells for detecting earthquake precursors".

29. AGU 2015 Fall Meeting, San Francisco, CA, USA-"Augmenting Forest Stand Parameters using Landsat TM Spectral Images".

30. AGU 2014 Fall Meeting, San-Francisco, CA, USA-"Atmosphere Mitigation in Precise Point Positioning Ambiguity Resolution for Earthquake Early Warning in the Western U.S.".

31. AGU 2013 Fall Meeting, San Francisco, CA, USA-"*Extracting Regional Ionospheric TEC Measurements from Dense GPS (GNSS) Networks in Area of High Seismic Risk*".

32. AGU 2012 Fall Meeting, San Francisco, CA, USA – "*Analyzing slip events along the Cascadia margin using an improved sub-daily GPS analysis strategy*".

33. UNAVCO 2012 Strainmeter Science workshop, La-Jolla, CA, USA - "*Improving Sub-Daily Strain Estimates Using GPS Measurements*".

34. AGU 2011 Fall Meeting, San Francisco, CA, USA – "*Improving Sub- Daily GPS Strain Estimates*".

35. SCEC Annual Meeting 2011, Palm Springs, CA, USA – "*Improving GPS Strain estimates on Sub-Daily timescale*".

36. XXIX URSI General Assembly 2011, Istanbul, Turkey - "*Natural ELF/VLF Atmospheric Noise Statistics in the Eastern Mediterranean*".

37. XIV International Conference on Atmospheric Electricity 2011, Rio de Jeneiro, Brazil - "*Modulation of The Earth-Ionosphere Waveguide Detected in VLF Atmospheric Noise Measurements*".

38. VERSIM workshop 2010, Prague, Czech Republic - "*The Connection between Meteor Showers and VLF Atmospheric Noise*".

39. EGU General Assembly 2010, Vienna, Austria - "*VLF Lightning Noise Treks the Solar Rotation*".

40. IAGA 2009, Sopron, Hungary - "*A New Approach For Monitoring The 27-Day Solar Rotation Using VLF Radio Noise On The Earth's Surface*".

41. IsraSWAPS 2009, College Ohalo, Qazrin, Israel - "*A New Approach For Monitoring The 27-Day Solar Rotation Using VLF Radio Noise On The Earth's Surface*".

42. XXIX URSI General Assembly 2008, Chicago, Illinois, USA – "*Do Meteors Produce VLF Radiation When Entering The Earth's* Atmosphere*''*.

Research Grants

2014-2017   JNF – 250,000 NIS. Forest inventory estimations using remote sensing data and field measurements. (MOP).

2015-2016   Ministry of Science, Technology and Space – 250,000 NIS. Augmenting Real-Time meteorological METEOSAT data using GPS satellites for natural hazards mitigation. (MOP).

2015   Ministry of Science, Technology and Space – 20,000 NIS. Real- Time measurements at Mount-Hermon cosmic ray observatory. (ARIEL).

2016   Survey of Israel (MAPI) – 60,000 NIS. GPS Integrated Water Vapor estimations using surface temperatures from METEOSAT satellite Data. (MOP).

2016   Ariel University – 19,000 NIS. Using atmospheric balloons and return home glider for upper atmospheric measurements. (ARIEL).

2016   Ariel University – 20,000 NIS. Measurements of ground water response to ground movements. (ARIEL).

2016-2019   Ministry of Agriculture – 600,000 NIS. Using Unmanned Aircraft System (UAS) for obtaining multi-parametric capabilities to maintain sustainable vineyard management and natural resources efficiency. (MOP).

2017-2018   Ministry of Infrastructure – 80,000 NIS. Development of Physical Model for Earthquakes Effect of Groundwater Physiochemical Properties. (MOP).

2017   Ministry of Science, Technology and Space – 180,895 NIS. Combining Gamma-ray and Electric Field Measurements for Studying Atmospheric Electricity and Space-Weather Events. (MOP).

2017   Ministry of Science, Technology and Space – 110,400 NIS. Imaging of Transient Luminous Events (TLEs) in the SWIR Optical Range Using BGUSAT Space Platform (With Prof. Yoav Yair). (ARIEL).

2017   Ministry of Science, Technology and Space – 243,005 NIS. Estimating Integrated Water Vapor (IWV) Distribution Using GPS and METEOSAT Satellites for Augmenting Regional Weather Models. (MOP).

2017-2019 Ministry of Science, Technology and Space – 1,000,000 in total, 138,000 NIS to Ariel University. Center of Knowledge in "Space Weather and Earth Environment Theme (SWEET). (ARIEL).

2017   Ariel University – 20,000 NIS. Developing Alpha-Particle Detector for Advance Laboratory and In-Situ Measurements of ^{222}Rn Radioactive Decay in the Samaria region (with Dr. Eric Rosenberg). (ARIEL).

2017   Ariel University – 10,000 NIS. Developing a Function for Earthquake Prediction at the DST Fault System (with Dr. Nimrod Inbar). (ARIEL).

2018   Ministry of Economy (Kamin) – 439,880 NIS. Free Space Optics (FSO) for Nano-satellites Communication (with Prof. Boza Ben- Mosh). (ARIEL).

2018   Ariel University – 22,000 NIS. Detection of Electromagnetic Anomalies at Fault Zones by Nano-Satellites: A possible tool for earthquake prediction (with Dr. Nimrod Inbar). (ARIEL).

2018   Ministry of Defense (MAFAT) – 200,000 NIS. Rapid Prototyping and Demonstration of Nano Satellite with Free Space Optical (FSO) Communication (with Prof. Boza Ben-Mosh). (ARIEL).

2018   Ariel University – 15,000 NIS. Using Conductivity Sensor for Measuring Pollution in the Samaria region. (ARIEL).

2018-2019 Ministry of Science, Technology and Space – 399,625 NIS. Using machine learning methods to construct predictions for severe atmospheric and space weather events. (MOP).

2019   Ministry of Economy (Kamin) – 440,00 NIS. Free Space Optics (FSO) for Nano-satellites Communication (with Prof. Boza Ben- Mosh). (ARIEL).

2019   Ariel University – 25,000 NIS. Detecting and classifying cannabidiol (CBD) and tetrahydrocannabinol (THC) levels in cannabis using spectral response analysis. (ARIEL).

2019-2020   Ministry of Science, Technology and Space – 300,000 NIS. Utilizing passive and active remote sensing techniques for current agriculture and environmental research conducted at the Samaria and Jordan rift area. (MOP).

2019-2021   Ministry of Infrastructure – 180,000 NIS. Utilizing remote sensing and GPS satellites combined with ground-based observations for producing earthquake forecasting using machine learning techniques. (ARIEL).

2021   Ministry of Defense (MAFAT) – 200,000 NIS. Investigating the ability to assess and predict Total Electron Content (TEC) in the ionosphere for improving single frequency GNSS positioning. (ARIEL).

2021   Ariel University – 20,000 NIS. Studying the impact of atmospheric constrains on gas flow within thick subsurface porous media in the Samaria and Jordan Rift Valley using radon as a natural radioactive ultra-tracer. (ARIEL).

2022   Ariel University – 30,000 NIS. Using AI techniques for predicating Ionospheric total electron content for improving single-frequency GPS accuracy. (ARIEL).

2022   Ministry of Defense (MAFAT) – 150,000 NIS. Investigating the ability to assess the ionospheric D-layer lower boundary height and conductivity for VLF communication along with classifying ground and sky waves at varying distances. (ARIEL).

2022   Ministry of Defense (MAFAT) – 175,000 NIS. Investigating the ability to assess and predict Total Electron Content (TEC) in the ionosphere for improving single frequency GNSS positioning – Phase II. (ARIEL).

Research student

1. Postdoctoral scholar - Dr. Roy Yaniv, September 2017 - September 2019.

2. Postdoctoral scholar - Dr. Shlomi Ziskin, starting date - March 2019.

3. Postdoctoral scholar – Dr. Tetiana Skorokhod, starting date - January 2020.

4. Ph.D. - Anton Leontiev, October 2015 - October 2020.

5. Ph.D. - Saed Asaly, starting date - May 2018.

6. Ph.D. - Ayelet Benkovitz, starting date - October 2018.

7. Ph.D. - Kobi Gozlan, starting date   - March 2019.

8. Ph.D. - Vlad Landa, starting date - May 2019.

9. Ph.D. – Odelya Toledano Zurel, starting date - October 2020.

9. M.Sc. - Tamir Tzadoc (with Prof. Colin Price from TAU), graduated September 2020.

10. Research students - Erez Dahan, October 2014 - October 2016.

11. 4th Year final projects - Nir Frankel, Yossi Orlev, Moshik Kaufman, Elad Bin, Dan Cohen, Mordechay Yaffe, Roni Vaknin, Shlomi Bachar, Yonatan Berkovitch, Yoni Otman. Nofar Elboim.

Additional Information

<u>Reviewer for:</u>

2006-To date   Radio Science (RS), Journal of Atmospheric and Solar Terrestrial Physics (JASTP), International Journal on Geomathematics (GEM), Advances in Space Research, Atmospheric Research (AR), Journal of Geophysical Research (JGR).

Synopsis of research, including reference to publications and grants in above lists

(Do not exceed three single-spaced pages.)

My research group is using and upgrading the existing GPS receivers' network, currently operated in Israel, along with gamma ray detectors, ULF magnetic sensors and other available remote sensing infrastructures to form a unique multi-parametric scientific platform and lead fundamental and applied geodynamic and atmospheric studies. This platform will also have the ability to detect, characterize, assess, forecast, and mitigate natural hazards, such as earthquakes, tsunamis, extreme storms, flooding, and space weather events.

My interest in Earth observation technologies and their broad applications to answer Earth science related problems has led me to gain extensive knowledge in research and development for a broad range of Earth science applications including the improvement and use of GPS and Interferometric Synthetic Aperture Radar (InSAR) technologies, with attention to measuring tectonic motions, crustal deformations, and earthquake studies, along with electromagnetic wave propagation at different atmospheric layers. These involve improvements of algorithms and analysis techniques (filtering theory, mathematical model improvement, and computational methods), in addition to considerable interpretive scientific Earth studies. For the last four years I have been heading the remote sensing laboratory at Ariel University, where I have broadened my skills in combining multispectral and electromagnetic datasets, gamma ray and fair weather atmospheric electric field measurements as well as augmenting atmospheric balloon experiments using UAVs. I have also gained experience in writing successful grant proposals, teaching courses and supervising graduate and undergrad students.

I believe that this combination allows me to advance the knowledge of ground and space-based geosciences observation technologies and their broad scientific applications. My experience will also enable me to develop new methods for studying Earth surface and atmospheric modifications while linking them to the triggering mechanisms. In this respect, I can contribute to and further develop the research activities in the Department of Physics at Ariel University.

Currently I have several ongoing projects:

- Real-Time measurements at Mount-Hermon cosmic ray observatory.
- GPS Integrated Water Vapor estimations using surface temperatures from METEOSAT satellite Data.
- Using atmospheric balloons and return home glider for upper atmospheric measurements.
- Measurements of ground water response to ground movements.
- Using Unmanned Aircraft System (UAS) for obtaining multi-parametric capabilities to maintain sustainable vineyard management and natural resources efficiency.
- Development of Physical Model for Earthquakes Effect of Groundwater Physiochemical Properties.
- Combining Gamma-ray and Electric Field Measurements for Studying Atmospheric Electricity and Space-Weather Events.
- Estimating Integrated Water Vapor (IWV) Distribution Using GPS and METEOSAT Satellites for Augmenting Regional Weather Models.
- Heading the Center of Knowledge (together with Prof. Colin Price from TAU) in "Space Weather and Earth Environment Theme (SWEET).
- Developing Alpha-Particle Detector for Advance Laboratory and In-Situ Measurements of ^{222}Rn Radioactive Decay in the Samaria region.
- Free Space Optics (FSO) for Nano-satellites Communication.
- Using machine learning techniques for natural hazards mitigation.