

# Shimrit Maman, Ph.D.

## *Curriculum Vitae*

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### Current Position

**Research Associate and Laboratory manager, Earth and Planetary Image Facility (EPIF), Ben-Gurion University of the Negev, Beer-Sheva, IL.**

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### Professional Activities

**BGUSAT, Satellite ground receiving station.**

**BGU Green Campus, Education and Community Committee.**

**Reviewer, *Geomorphology Journal*.**

**Education and outreach: Venus program, Israel Space Agency.**

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### Employment History

2013–2015 **Researcher and Laboratory manager, Earth and Planetary Image Facility (EPIF), Ben-Gurion University of the Negev, Beer-Sheva, IL.**

2015 **Teaching Fellow, Ben-Gurion University of the Negev, Beer-Sheva, IL.**

2012–2014 **PostDoc Fellow in Geography and Environmental Development, Ben-Gurion University of the Negev, Beer-Sheva, IL.**

Advisor: Prof. Dan Blumberg.

Research lab : Earth and Planetary Image Facility (EPIF) laboratory

2012–2014 **BGU Green Campus Coordinator, Ben-Gurion University of the Negev, Beer-Sheva, IL.**

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### Education

2007–2012 **PhD in the Department of Geography and Environmental Development, Ben-Gurion University of the Negev, Beer-Sheva, IL.**

Dissertation Title: Mobility and stability of the Central Asian sand seas (Karakum and Kyzylkum), a study by remote sensing and geographic information systems.

Advisors: Prof. Dan Blumberg and Prof. Haim Tsoar .

Research lab : Earth and Planetary Image Facility (EPIF) laboratory

- 2004–2006 **M.Sc in the Department of Solar Energy and Physical Environment**, *Jacob Blaustein Institutes for Desert Research, Ben-Gurion University of the Negev, Sede-Boker campus, IL.*  
 Thesis title: Monitoring indigenous water harvesting systems on takyr in Turkmenistan by remote sensing.  
 Advisors: Prof. Dan Blumberg and Dr. Lea Orlovsky.  
 Research lab: Earth and Planetary Image Facility (EPIF) laboratory
- 2001–2004 **Bachelors in Geography and Environmental Development**, *Ben-Gurion University of the Negev, Beer-Sheva, IL.*

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## Honors and Awards

- 2015 **BGU President Award**, *Green Campus, Ben-Gurion University of the Negev, IL.*
- 2012-2013 **Short term postdoctoral Scholarship**, *Kreitman School for Advanced Graduate Studies, Ben-Gurion University of the Negev, IL.*
- 2007-2012 **Community Action Scholarship**, *Community Action Department, Ben-Gurion University of the Negev, IL.*
- 2007-2011 **Negev (Zin) Scholarship**, *Kreitman School for Advanced Graduate Studies, Ben-Gurion University of the Negev, IL.*
- 2006 **Graduated (Msc) with honors**, *Department of Solar Energy and Physical Environment, Ben-Gurion University of the Negev, Sede-Boker campus, IL.*
- 2004–2006 **Full scholarship for master's degree**, *Department of Solar Energy and Physical Environment, Ben-Gurion University of the Negev, Sede-Boker campus, IL.*
- 2004 **Graduated (third year of the B.A.) with honors**, *Department of Geography and Environmental Development, Ben-Gurion University of the Negev, Beer-Sheva, IL.*

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## Research Students

- 2016-present **Chen Meged**, *MA, Dune Morphology Mapping of Sand Seas in Central Asia:Kara-Kum and Kyzyl-Kum.*
- 2016-present **Ram Tamir**, *MA, Engineering Habits of Mind in High School Students Involved in a Satellite Project.*

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## Scientific Publications

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### Refereed articles in scientific journals

- 2017 **Earth Aeolian wind streaks:Comparison to wind data from model and stations**, *Cohen-Zada, A.L., Maman, S and Blumberg, D.G., J. Geophys. Res. Planets, 122.*  
 DOI: 10.1002/2016JE005242

- 2017 **Long and short term population dynamics of acacia trees via remote sensing and spatial analysis: Case study in the southern Negev Desert**, *Isaacson, S., Ephrath, J.E., Rachmilevitch, S., Maman, S., Ginat, H., Blumberg, D.G.*, *Remote Sensing of Environment*, 198, 95–104.  
DOI: 10.1016/j.rse.2017.05.035
- 2016 **Earth and Planetary Aeolian Streaks: A Review**, *Cohen-Zada A.L., Blumberg, D.G., and Maman, S.*, *Aeolian Research*, 20, 108-125.  
DOI: DOI:10.1016/j.aeolia.2016.04.002
- 2011 **A landcover change study of takyr surfaces in Turkmenistan**, *Maman, S., Orlovsky, L., Blumberg, D.G., Berliner, P., and Mamedov, B.* *Journal of Arid Environments*, doi.10.1016/j.jaridenv.2011.04.002
- Invited review, 2011 **The Central Asian ergs, A study by remote sensing and geographic information systems**, *Maman, S., Blumberg, D.G., Tsoar, H., Mamedov, B., Porat, N.* *Aeolian Research*, Elsevier

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### Chapters in collective volumes - Conference proceedings, etc

- 2016 **Spec Tool; an online education and research resource**, *Maman, S, Shenfeld, A, Isaacson, S, Blumberg, DG*, *International Archives of the Photogrammetry, Remote Sensing and spatial Information Sciences* , Vol. 41 Issue B6, 3p.  
Prague, Czech Republic
- 2016 **Large oil spill classification using SAR images based on spatial histogram**, *Schvartzman, I. Havivi, S., Maman S. Rotman S.R Blumberg, D. G.*, *The International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences*, Volume XLI-B8, XXIII ISPRS Congress.  
Prague, Czech Republic
- 2016 **Utilizing SAR And Multispectral Integrated Data for Emergency Response**, *Havivi, S.,Schvartzman I. Maman S.. Marinoni A. Gamba Pc. Rotman, S.R Blumberg, D. G.*, *The International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences*, Volume XLI-B7,XXIII ISPRS Congress.  
Prague, Czech Republic
- 2016 **Monitoring tree population dynamics in arid zone through multiple temporal scales: integration of spatial analysis, change detection and field long term monitoring**, *Isaacson, S., Rachmilevitch, S., Ephrath, J.E., Maman, S., Blumberg, D.G.*, *The International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences*, Volume XLI-B7, XXIII ISPRS Congress.  
Prague, Czech Republic
- 2016 **Improved covariance matrix for target detection in hyperspectral imaging**, *Schvartzman, I, Maman, S, Blumberg, DG, Rotman, SR*, *Science of Electrical Engineering ICSEE*, IEEE International Conference.
- 2016 **Multi-temporal anomaly detection technique**, *Dayan, I., Maman, S., Blumberg, D. G., Rotman, S.*, *Electro-Optical and Infrared Systems: Technology and Applications XIII* , Proc. SPIE 9987.  
Edinburgh, United Kingdom

- 2016 **Extraction Of Hydrological Parameters Using High Spatial Resolution Remote Sensing For KINEROS2 Model**, *Sadeh, Y, Blumberg , DG, Cohen ,H, Morin, E, Maman ,S.*, EGU General Assembly Conference Abstracts 18, 9534, Vienna, Austria.
- 2016 **Use of High Spatial Resolution Remote Sensing for Hydro-Geomorphologic Analysis of Medium-sized Arid Basins**, *Sadeh, Y, Blumberg , DG, Cohen ,H, Morin, E, Maman ,S*, EGU General Assembly Conference Abstracts 18, 9456, Vienna, Austria.
- 2016 **Using remote sensing and spatial analysis of trees characteristics for long-term monitoring in arid environments**, *Isaacson, S, Blumberg, DG, Rachmilevitch, S, Ephrath, JE, Maman, S*, EGU General Assembly Conference Abstracts 18,6076, Vienna, Austria.
- 2016 **Advanced Interferometric Synthetic Aperture Imaging Radar (InSAR) for Dune Mapping**, *Havivi, S , Amir, D ,Schvartzman, I, August, Y ,Mamman, S, Rotman, SR*, EGU General Assembly Conference Abstracts 18,14140, Vienna, Austria.
- 2016 **Geographic Information Technologies as an outreach activity in geoscientific education**, *Maman, S, Isaacson, S, Blumberg, DG*, EGU General Assembly Conference Abstracts 18,14801, Vienna, Austria.
- 2015 **Wind Streaks on Earth; Exploration and Interpretation**, *Cohen-Zada, A. L., Blumberg, D. G., and Maman, S*, EGU General Assembly Conference Abstracts Vol. 17, p. 214, Vienna, Austria.
- 2015 **The Karakum and Kyzylkum sand seas dynamics; mapping and palaeoclimatic interpretations**, *Maman, S., Blumberg, D. G., Tsoar, H., and Porat, N.*, EGU General Assembly Conference Abstracts Vol. 17, p. 136, Vienna, Austria.
- 2015 **Remote sensing, Space and Geo-physics as a scientific education and outreach trigger at Ben-Gurion University**, *Maman, S., Blumberg, D.G.*, International Astronautical Federation, IAC-15-E1.8.3. Jerusalem. Israel
- 2014 **Central Asian sand seas climate change as inferred from OSL dating**, *Maman, S., Blumberg, D. G., Tsoar, H., and Porat, N.*, EGU General Assembly Conference Abstracts Vol. 16, p. 2804, Vienna, Austria.
- 2010 **Aeolian mobility and stability of the Central Asian ergs, a study by remote sensing and geographic information systems**, *Maman,S., Blumberg,D.G., Tsoar,H.*  
ISPRS Archive Vol. XXXVIII, Part 4-8-2-W9

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## Manuscripts in progress

**Mapping dune dynamics by InSAR coherence: Case study of the Ashdod-Nizzanim coastal dunes**, *Havivi, S., Maman S., Blumberg, D.G., August, Y., Rotman, S. and Amir, D.*

Under revision: ESPL

**Advanced InSAR imaging for dune mapping**, *Havivi, S., Maman S., Blumberg, D.G., August, Y., Rotman, S. and Amir, D.*

Intended journal: Journal of Geophysical Research

**SAR coherence for assessing aeolian geomorphic stability and motion: The Negev-Sinai dunes case**, *Blumberg, D.G., August, Y., Aviram, R., Rotman, S., Maman S., and Havivi, S.*

Intended journal: Remote Sensing of Environment

**Vector anomaly detection improvement technique**, *Dayan, I., Maman, S., Rotman, S., and Blumberg, D.G.*

Intended journal: IEEE TIGARS

**Analyzing long term and short term spatial population dynamic of acacia trees using Infra-red imaging**, *Isaacson, S., Blumberg, D.G., Efrat, Y., Rachmilevitz, S., Maman, S., and Zohar, I.*

Intended journal: Journal of Arid Environments

**Evaluating Spectral vs. Spatial Resolution for Target detection**, *Schvartzman, I., Maman, S., Rotman, S., and Blumberg, D.G.*

Intended journal: IEEE transactions on Geoscience and Remote sensing

**Spectral discrimination of takyr and solonchaks soils of Turkmenistan**, *Maman, S., Blumberg, D.G., Orlovsky, L., and Mamedov, B.*

Intended journal: International journal of remote sensing

**A global perspective on the redness and blackness of sand seas using spectrometric measurements: a case study of the Karakum and Kyzylkum**, *Maman, S., Blumberg, D.G., Muhs, D. and Roskin, J.*

Intended journal: International journal of remote sensing

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## Conferences, Seminars and Workshops

- 2017 **Seminar**, *Central Asian sand seas climate change as inferred from Remote sensing and OSL dating*.  
Arava Institute, Ktora, IL
- 2017 **Seminar**, *Nano-satellite remote sensing*, Department of Geography.  
Haifa University, Haifa, IL
- 2017 **On-line lecture**, *Environmental research using satellite*, Israel Space Agency.  
IL
- 2016 **Seminar**, *A Comparison of Terrestrial GCM Data to Wind Streaks*, Desert Climates,  
School of Geographical Sciences and Urban Planning.  
Arizona State University, Tempe, USA
- 2016 **Seminar**, *Karakum and Kyzylkum sand seas dynamics mapping and palaeoclimatic interpretations*, School of Geographical Sciences and Urban Planning.  
Arizona State University, Tempe, USA
- 2016 **Seminar**, *Remote Sensing Monitoring of Indigenous Water Harvesting Systems in Southern Turkmenistan*, School of Sustainable Engineering and the Built Environment,  
Arizona State University, Tempe, USA.
- 2015 **Seminar**, *Central Asian sand seas dynamics; mapping and palaeoclimatic interpretations*, Department of Geography and Environmental Development.  
Hebrew University, Jerusalem, IL
- 2015 **Oral presentation**, *Remote sensing, space, and geo-physics as a scientific education and outreach trigger at BGU, IAC 2015*.  
Jerusalem, Israel

- 2015 **Poster presentation**, *Karakum and Kyzylkum sand seas dynamics; mapping and palaeoclimatic interpretations*, XIX INQUA.  
Nagoya, Japan
- 2015 **Oral presentation**, *Palaeoclimatic interpretations of the Mid- Holocene stabilization of the Karakum and Kyzylkum sand seas, Central Asia*, XIX INQUA.  
Nagoya, Japan
- 2015 **Teacher's Workshop**, *The Use of Satellites in Academic Research: Central Asian ecological issues as case studies*, The National Center for professional development for teachers.  
Shlomi, IL
- 2015 **Oral presentation**, *The Karakum and Kyzylkum sand seas dynamics; mapping and palaeoclimatic interpretations*, European Geosciences Union(EGU).  
Vienna, Austria
- 2014 **Oral presentation**, *Central Asian sand seas climate change, as inferred from OSL dating* , The Israel Geographic Association (IGA).  
Haifa University, IL
- 2013 **Oral presentation**, *Mid-Holocene stabilization of the Karakum and Kyzylkum sand seas, Central Asia, evidence from OSL ages*, European Geosciences Union(EGU).  
Vienna, Austria
- 2013 **Physical seminar**, *Mid-Holocene stabilization of the Karakum and Kyzylkum sand seas, Central Asia, evidence from OSL ages*, Department of Geography and Environmental Development.  
Ben-Gurion University of the Negev,Beer-Sheva, IL
- 2012 **Oral presentation**, *Evidence for climate change in Central Asia; an OSL and remote sensing study of the sand seas*, Third remote sensing student conference.  
Sede Boqer Campus, Ben-Gurion University of the Negev, IL
- 2012 **Oral presentation**, *Evidence for climate change in Central Asia; an OSL and remote sensing study of the sand seas*, Association of American Geographers (AAG).  
New-York, NY, USA
- 2011 **Seminar**, *Aeolian Mobility and stability of the Central Asian ergs, A study by remote sensing and geographic information systems*, Department of Geography and Environmental Development.  
Ben-Gurion University of the Negev,Beer-Sheva, IL
- 2011 **Oral presentation**, *Aeolian Mobility and stability of the Central Asian ergs, A study by remote sensing and geographic information systems*, Minerva Gentner Symposium on Aeolian Processes.  
Eilat, IL
- 2011 **Poster**, *Aeolian Mobility and stability of the Central Asian ergs, A study by remote sensing and geographic information systems*, 8<sup>th</sup> Conference on Active Research by Environmental Science Students (CARESS).  
Weizmann Institute of Science, IL
- 2010 **Paper**, *Aeolian mobility and stability of the Central Asian ergs, a study by remote sensing and geographic information systems*, ISPRS JOINT WORKSHOP, ISPRS Archive Vol. XXXVIII, Part 4-8-2-W9.  
University of Haifa, IL

- 2010 **Oral presentation**, *Aeolian mobility and stability of the Central Asian ergs, a study by remote sensing and geographic information systems*, Association of American Geographers (AAG).  
Washington, DC, USA
- 2009 **Oral presentation**, *Mobility and stability of the Central Asian ergs, a study by remote sensing and geographic information systems*, The Israel Geographic Association (IGA).  
Haifa University, IL
- 2009 **Poster**, *Mobility and Stability of the Central Asian ergs, A study by remote sensing and geographic information systems - preliminary results*, 7<sup>th</sup> Conference on Active Research by Environmental Science Students (CARESS).  
Weizmann Institute of Science, IL
- 2009 **Poster**, *Mobility and Stability of the Central Asian ergs, A study by remote sensing and geographic information systems - preliminary results*, Dunes in Israel, Policy and Management.  
Ben-Gurion University of the Negev, IL
- 2006 **Poster**, *Monitoring Indigenous Water Harvesting Systems on Takyr in Turkmenistan by Remote Sensing*, The Israel Geographic Association (IGA).  
Hebrew University, IL
- 2006 **Poster**, *Monitoring Indigenous Water Harvesting Systems on Takyr in Turkmenistan by Remote Sensing*, The British Geomorphological Research Group (BGRG).  
Loughborough University, UK

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### Convener of Academic activities

- 2017 **Workshop**, *2nd Nano-Satellites workshop: Innovations and challenges*.
- 2017 **Conference**, *Space Junk: sustainability and space and space sustainability*.
- 2016 **Conference**, *Women in space*.
- 2015 **Conference**, *Exploration methods for radar (SAR) data compression*.
- 2015 **Conference**, *Innovations and challenges in the field of Nanosatellites*.
- 2015 **Seminar**, *Development of optical based hyperspectral compressed sensing system for remote sensing use*.
- 2005-2015 **Student Symposium**, *Earth and Planetary Image Facility*.
- 2005-2015 **Annual Event Honoring Col. Ilan Ramon and the STS-107 Crew and Assaf Ramon**, *Earth and Planetary Image Facility, BGU*.
- 2013 and 2014 **Seminar**, *ISU, International Space University*.
- 2010 **Workshop**, *Basic concepts in nuclear physics*.
- 2006 and 2010 **Professional Tour**, *Israel Aerospace Industries*.

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### Educational Experience

**Lecturer:**

- 2017 **Environmental issues, sustainability and nature conservation**, *Ben-Gurion University of the Negev*, 1052-205-1.
- 2015 **Hyperspectral Remote Sensing**, *Ben-Gurion University of the Negev*, 128-1-0185.
- 2011–2012 **Earth from Space**, 'Negishut', *Ben-Gurion University of the Negev*.
- 2004–Present **Introduction to Remote sensing**, *Makif Gimmel high school, Beer-Sheva*.
- 2004–2008 **Physical basis of Remote sensing**, *Amit high school, Beer-Sheva*.
- Teaching assistant:**
- 2013–2014 **Remote Sensing and GIS Seminar**, *Ben-Gurion University of the Negev*.
- 2006–2012 **Aeolian Geomorphology**, *Ben-Gurion University of the Negev*.
- 2011–2011 **Planetary Geomorphology**, *Ben-Gurion University of the Negev*.
- 2007–2009 **Introduction to remote sensing**, *Achva College*.
- 2005–2006 **Planetary Geomorphology**, *Ben-Gurion University of the Negev*.

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### Military service

- 1998–2000 **Teacher-Soldier in the education unit**, *IDF, Mandatory Service*.

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### Computer skills

Software MATLAB, ENVI, ERDAS Imagine, ArcGIS, Microsoft office, openoffice, latex, Tafnit, Google Earth Pro, Spec-tool

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### Key research techniques

ASD - FieldSpecFR, GPR, LAI, DGPS, Flir- thermal camera

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### Administrative responsibilities

Research grants ISF, Most

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### Languages

Hebrew **Fluent** *My native language.*  
 English **Fluent** *Speaking, reading, and writing.*