Yair Mau

Curriculum Vitae

Contact Details

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Research Positions and Education

2016 - today	Senior Lecturer at the Department of Soil and Water Sciences, Robert H. Smith Faculty of Agriculture, Food and Environment, The Hebrew University of Jerusalem, Israel.
2013 - 2016	Postdoctoral associate at the Department of Civil and Environmental Engineering, Duke University, United States, under the guidance of prof. Amilcare Porporato. **Vaadia-BARD Postdoctoral Fellowship FI-517-14.**
2013	Ph.D. at the Physics Department of the Ben-Gurion University of the Negev, Israel. Research under the guidance of prof. Ehud Meron. Thesis: *Pattern formation in spatially forced systems: application to vegetation restoration.*
Summers 2008-10	Research at the Los Alamos National Laboratory, Los Alamos, NM, United States, under the guidance of Dr. Aric Hagberg.
2009	M.Sc. at the Physics Department of the Ben-Gurion University of the Negev, Israel. Research under the guidance of prof. Ehud Meron. Thesis: *Localized spatial structures in non-equilibrium systems.*
2004	B.Sc. at the Physics Institute of the University of São Paulo, Brazil.

Publications

Papers in peer-reviewed journals

2016	**Yair Mau** and Amilcare Porporato. Optimal control solutions to sodic soil reclamation. *Advances in Water Resources*, 91:37–45, 2016
2015	A. Porporato, X. Feng, S. Manzoni, **Yair Mau**, A.J. Parolari, and G. Vico. Ecohydrological modeling in agroecosystems: Examples and challenges. *Water Resources Research*, 2015
	Yair Mau and Amilcare Porporato. A dynamical system approach to soil salinity and sodicity. *Advances in Water Resources*, 83:68–76, 2015
	Yair Mau, Lev Haim, and Ehud Meron. Reversing desertification as a spatial resonance problem. *Physical Review E*, 91(1):012903, 2015
2014	**Yair Mau**, Xue Feng, and Amilcare Porporato. Multiplicative jump processes and applications to leaching of salt and contaminants in the soil. *Physical Review E*, 90(5):052128, 2014

Lev Haim, **Yair Mau**, and Ehud Meron. Spatial forcing of pattern-forming systems that lack inversion symmetry. *Physical Review E*, 90(2):022904, 2014

2013 **Yair Mau**, Lev Haim, Aric Hagberg, and Ehud Meron. Competing resonances in spatially forced pattern-forming systems. *Physical Review E*, 88(3):032917, 2013

2012 **Yair Mau**, Aric Hagberg, and Ehud Meron. Spatial periodic forcing can displace patterns it is intended to control. *Physical Review Letters*, 109(3):034102, 2012

2009 **Yair Mau**, Aric Hagberg, and Ehud Meron. Dual-mode spiral vortices. *Physical Review E*, 80(6):065203, 2009

Presentations

Seminars

2015 Department of Earth and Planetary Sciences, Weizmann Institute of Science, Israel.

Faculty of Civil and Environmental Engineering, Technion, Israel.

Faculty of Agriculture, Food and Environment, Hebrew University of Jerusalem, Israel.

Institute for Desert Research, Ben-Gurion University of the Negev, Israel.

2014 Center for Nonlinear and Complex Systems, Duke University.

2013 Faculty of Mathematics and Computer Science, Weizmann Institute of Science, Israel.

Physics Department, Bar-Ilan University, Israel.

Center for Nonlinear Studies at the Los Alamos National Laboratory.

2012 Physics Department, Hebrew University of Jerusalem, Israel.

Physics Department, Tel Aviv University, Israel.

Institute for Desert Research, Ben-Gurion University of the Negev, Israel.

Physics Department, Ben-Gurion University of the Negev, Israel.

Conferences

2016 Dynamics Days US, Durham, NC, United States (poster).

2014 American Geophysical Union fall meeting, United States (contributed talk).

Dynamics Days US, Atlanta, GA, United States (poster). **Best Poster Award.**

2013 Eco-hydrology of Semiarid Environments Workshop, Beer Sheva, Israel (poster).

Dynamics Days US, Denver, CO, United States (poster).

2012 Nonlinear and Soft Matter Physics session at the Israel Physical Society meeting (contributed talk).

Drylands, Deserts and Desertification Conference, Sde Boker, Israel (poster).

2011	Dynamics Days Europe, Oldenburg, Germany (poster).

Teaching Experience

2009 - 2013	Teaching lab assistant for third year students at the Physics Department at Ben-Gurion University of the Negev in the field of electro-optics. Experiments: optical Fourier transform and optical fibers.
2010 - 2013	Coordinator and instructor of the selection process of the Israeli National Physics Olympiad for high school students.

Computation Skills

Programming in Python, C, Mathematica, and Matlab; numerical integration of PDEs using explicit and semi-spectral methods; numerical integration of SDEs using Monte Carlo methods; numerical continuation of solutions of nonlinear equations using AUTO; writing in LaTeX.

Languages

Mother tongue	Portuguese
High level	English, Hebrew, Spanish and French