Curriculum Vitae - Ehud Meron

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Education

1973 - 1977	BSc, Chemistry (physics enhanced 4 years program), Technion
1982 - 1985	Ph.D., Chemical Physics Department, Weizmann Institute of Science
1985 - 1987	Postdoctoral fellow, Physics Department, University of Chicago
1987 - 1988	Postdoctoral fellow, Astronomy Department, Columbia University

Academic experience

1994 – present	Blaustein Institutes for Desert Research (BIDR) and Physics Department, Ben-Gurion University (Professor since 2001)
1991 - 1994	Department of Mathematics, University of Arizona (Visiting Assistant Professor)
1988 - 1991	Chemical Physics Department, Weizmann Institute of Science (Scientist)

Awards and fellowships

1977	Kolthoff Prize, Technion
1984	Brenner Prize, Weizmann Institute of Science
1985	Dr. Chaim Weizmann Post-Doctoral Fellowship for Scientific Research
1988	Wolf Foundation Research Fellowship
1989	Bantrell Career Development Fellowship for Scientific Research
1996	Sheba Prize, David and Paula Ben-Gurion Fund
2017	University of Bayreuth International Senior Fellow
2018	Phyllis and Kurt Kilstock Chair in Environmental Physics of Arid Zones

Outstanding research grants

2003	James S. McDonnell Foundation Research Award. Title: Ecosystem engineers, a missing link in exploring biodiversity: A pattern-formation approach
2023	ERC Synergy grant. Title: Pathways of resilience and evasion of tipping in ecosystems

Research interests

Pattern formation, front dynamics, complex systems, dryland and savanna ecosystems, vegetation patterns, phenotypic plasticity, community assembly, tipping points, sustainability.

Selected publications

Book: Meron E. (2015). Nonlinear Physics of Ecosystems, CRC Press, Taylor & Francis Group.

Undergraduate paper: Meron E., and Katriel J. (1977), A Hohenberg-Kohn Theorem for Non-Local Potentials, Phys. Lett. A 61a, 19-21.

Selected papers:

1. Meron E. (1992). Pattern Formation in Excitable Media, *Physics Reports* 218, 1-66.
2. Hagberg A. and Meron E. (1994). Pattern Formation in Non-Gradient Reaction Diffusion Systems: The Effects of Front Bifurcations, *Nonlinearity* 7, 805-835.
3. Hagberg A. and Meron E. (1994). From Labyrinthine Patterns to Spiral Turbulence. *Phys. Rev. Lett.* 72, 2494-2497.

4. Von Hardenberg J., Meron E., Shachak M., and Zarmi Y. (2001). Diversity of Vegetation Patterns and Desertification. *Phys. Rev. Lett.* 87, 198101(1-4).
5. Gilad E., von Hardenberg J., Provenzale A., Shachak M., and Meron E. (2004). Ecosystem Engineers: From Pattern Formation to Habitat Creation. *Phys. Rev. Lett.* 93, 098105(1-4).
6. Sheffer E., von Hardenberg J., Yizhaq H., Shachak M., Meron E. (2013). Emerged or imposed: a theory on the role of physical templates and self-organization for vegetation patchiness, *Ecology Letters* 16, 127-139 (2013).
7. Zelnik Y. R., Meron E., Bel G. (2015). Gradual Regime Shifts in Fairy Circles. *Proceedings of the National Academy of Sciences* 112, 12327–12331.
8. Getzin S., Yizhaq H., Bell B., Erickson T. E., Postle A. C., Katra I., Tzuk O., Zelnik Y. R., Wiegand K., Wiegand T., and Meron E. (2016). Discovery of fairy circles in Australia supports self-organization theory. *Proceedings of the National Academy of Sciences*, 113, 3551–3556.
9. Meron E. (2016). Pattern formation - a missing link in the study of ecosystem response to environmental changes, *Mathematical Biosciences* 271, 1-18.
10. Meron E. (2018). From Patterns to Function in Living Systems: Dryland Ecosystems as a Case Study. *Annual Review of Condensed Matter Physics* 9, 79-103.
11. Ehud Meron (2019). Vegetation pattern formation: the mechanisms behind the forms, *Physics Today*, 72, 30.
12. Cristian Fernandez-Oto, Omer Tzuk and Ehud Meron (2019). “Front instabilities can reverse desertification, *Phys. Rev. Lett.* 122, 048101.
13. Inderjit, R. M. Callaway, E. Meron (2021). Belowground feedbacks as drivers of spatial self-organization and community assembly, *Physics of Life Reviews* 38, 1-24.
14. Bidesh K. Bera, Omer Tzuk, Jamie J. R. Bennett, and Ehud Meron (2021). Linking spatial self-organization to community structure and biodiversity, *eLife* 2021;10:e73819.
15. José M. Grünzweig et al. (2022). Dryland mechanisms could widely control ecosystem functioning in a drier and warmer world", *Nature Ecology & Evolution* 6, 1064–1076.