TALIA TAMARIN- BRODSKY

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I joined MIT EAPS as an Assistant Professor in climate science in July 2023. My research interests include atmospheric temperature variability, midlatitude atmospheric dynamics, regional climate and extremes, and subseasonal-to-seasonal predictability. Applying ideas from synoptic meteorology into climate science, I currently study temperature extremes, midlatitude storm tracks, the role of dynamics in the non-Gaussianity of atmospheric variability, nonlinear atmospheric wave breaking events, and circulation regimes in current and future climate. My work combines theory, computational methods, and observational analysis.

EDUCATION AND APPOINTMENTS

Asst. Prof.	MIT, EAPS Department	current
Postdoc	Tel-Aviv University, Geophysics Department	2020
Postdoc	University of Reading, Meteorology Department (JSMF Postdoctoral Fellow)	2017
Ph.D.	Weizmann Institute, Department of Earth and Planetary Sciences	2012
M.Sc.	Tel-Aviv University, Physics Department	2009
B.Sc.	Tel-Aviv University, Double major: Mathematics & Geophysics	2004

PUBLICATIONS

T. Tamarin-Brdosky and N. Harnik, "The influence of weather regimes on the lifecycle of extratropical cyclones and anticyclones" (in preparation)

T. Tamarin-Brodsky and N. Harnik, "The relation between Rossby Wave Breaking events and low-level weather systems", Weather Clim. Dyn., (2023) (accepted)

Y. Yao, Y. Zhang, K. I. Hodges and T. Tamarin-Brodsky, "Different propagation mechanisms of deep and shallow wintertime extratropical cyclones over the North Pacific", *J. Clim.*, Vol. 36, 8277-8297 (2023)

T. Tamarin-Brodsky, B. J. Hoskins, K. Hodges and T. Shepherd, "A simple model for interpreting temperature variability and its higher-order changes", *J. Clim.*, Vol. 35 (1), 387–403 (2021)

K. kornhuber and T. Tamarin-Brdosky, "Future Changes in Northern Hemisphere Summer Weather Persistence Linked to Projected Arctic Warming", *Geophys. Res. Lett.*,Vol. 48, e2020GL091603 (2021)

T. Tamarin-Brodsky, K. Hodges, B. J. Hoskins and T. Shepherd, "Regional warming patterns shape changes in temperature variability", *Nat. Geosci.* Vol. 13, 414–421 (2020)

T. Tamarin-Brodsky, K. Hodges, B. J. Hoskins and T. Shepherd, "A Dynamical Perspective on the Atmospheric Temperature Variability and its Projected Changes", *J. Clim.*, Vol. 32, 1707-1724 (2019)

T. Tamarin-Brodsky and O. Hadas "The asymmetry of vertical velocity in current and future climate", *Geophys. Res. Lett.*, Vol. 46, 10.1029/2018GL080363 (2019)

U. Mikolajewicz, et. al, "The climate of a retrograde rotating earth", *Earth Syst. Dynam.*, Vol. 9, 1191–1215 (2018)

T. Tamarin-Brodsky and Y. Kaspi, "Enhanced poleward propagation of storms under climate change", *Nat. Geosci.*, 2017, Vol. 10, 908–913 (2017)

T. Tamarin and Y. Kaspi, "The poleward shift of storm tracks under global warming: a Lagrangian perspective", *Geophys. Res. Lett.*,Vol. 44, L073633 (2017)

T. Tamarin and Y. Kaspi, "Mechanisms controlling the downstream poleward deflection of midlatitude storm tracks", *J. Atmos. Sci.*, Vol. 74, 553-572 (2017)

T. Tamarin and Y. Kaspi, "The poleward motion of Extratropical cyclones from a potential vorticity tendency analysis", *J. Atmos. Sci*, Vol. 73, 1687-1707 (2016)

T. Tamarin, J. R. Maddison, E. Heifetz and D. P. Marshall, "A geometric interpretation of eddy Reynolds stresses in barotropic ocean jets", *J. Phys. Oceanogr.*, Vol. 46, 2285–2307 (2016)

T. Tamarin, E. Heifetz, O.M Umurhan and R. Yellin, "On the nonnormal–nonlinear interaction mechanism between counter-propagating Rossby waves", *Theor. Comput. Fluid Dyn.*, Vol. 29, 205–224 (2015)

T. Tamarin, J. R. Maddison, E. Heifetz and D. P. Marshall, "Canonical Hamiltonian representation of Pseudoenergy in shear flows using counter-propagating Rossby waves", *Q. J. Royal Meteorol. Soc.*, Vol. 135, 2161–2167 (2009)

SELECTED FELLOWSHIPS AND AWARDS

Rector award – Tel Aviv University, Geophysics	2022
Rewarding Excellence award- University of Reading, Meteorology	2020
James S. McDonnell Foundation- Postdoc fellowship in complex systems	2017-2019
Women in Science award- Prize for postdoctoral studies	2017-2018
Prof. Israel Dostrovsky Award- Doctoral rize of Excellence, Weizmann Institute	2017

SELECTED TALKS

American Geophysical Union (AGU) Fall Meeting San Francisco, USA	2023
Waves-to-Weather (W2W) Project (Invited Visitor) Mainz & Karlsruhe, Germany	2023
American Geophysical Union (AGU) Fall Meeting Chicago, USA	2022
American Meteorological Society (AMS) 102nd Annual Meeting (Invited Speaker) Texas, USA	2022
National Center for Atmospheric Science (NCAS) seminar Reading, UK	2020
American Geophysical Union (AGU) Fall Meeting (Invited Speaker) California, USA	2019
Climate and Wave Dynamics Workshop, Eilat, Israel	2019
Stormtracks Workshop, Stockholm, Sweden (Presented on my behalf by Prof. Ted Shepherd)	2018
SPARC General Assembly, Kyoto, Japan (Presented on my behalf by Ted Prof. Shepherd)	2018
American Geophysical Union (AGU) Fall Meeting (Invited Speaker) San Francisco, USA **(**declined due to pregnancy restrictions)	2018
Atmospheric and Oceanic Fluid Dynamics (AOFD) Portland, USA	2017
4th International Conference on Earth System Modelling (4ICESM) Max Planck Institute, Germany	2017
Model Hierarchies Workshop, Princeton University, USA	2016
SPARC DynVar workshop, Helsinki, Finland	2016
Atmospheric and Oceanic Fluid Dynamics (AOFD), Minneapolis, USA	2015

SYNERGIC ACTIVITIES

AMS AOFD Committee, Vice Chair	2024
Blue Hill Advisory Council	2023
Crosby and Houghton postdoc committee, MIT EAPS	2023
PAOC Graduate studies committee, MIT EAPS	2023
Martin Fellows Committee, MIT EAPS	2023
Session Co-organizer, EGU "Dynamics of the atmospheric circulation in past, present and future climates"	2019-2021