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The Hebrew University of Jerusalem

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**EDUCATION**

BSc- 1991, Hebrew University of Jerusalem, Faculty of Science, Mathematics and Computer Sciences, "Amirim" Excellency Program; MSc- 1996, Hebrew University of Jerusalem, Faculty of Science, Department of Atmospheric Sciences; PhD- 2002, Hebrew University of Jerusalem, Faculty of Science, Institute of Earth Sciences; post-doc; 2000-2003, University of Arizona, Tucson, Department of Hydrology and Water Resources

**APPOINTMENTS**

Hebrew University: Lecturer-2003 , Senior lecturer-2009, Associate Professor-2012;

**Administrative appointments (Hebrew U and others):**

2013-2016 Chair, Geography department  
2013-2016 Chair, Hydrology and Water Resources program

**AWARDS AND HONORS**

1995 Shindel Award, Institute of Earth Sciences, Hebrew University of Jerusalem  
1997 Goldshmidt Award, Israeli Association for Water Resources  
2000-2002 The Vaadia-BARD Postdoctoral Fellowship  
2004 Golda Meir Foundation Fellow  
2015 The Rector's Award for outstanding researchers

**SELECTED PROFESSIONAL ACTIVITY**

2008-2013 Journal of Hydrology, Editorial Board  
2009-to date Hydrology and Earth System Sciences, Editorial Board  
2015 Special Issue on Hydrologic Applications of Weather Radar, Journal of Hydrology  
2009-to date Member of the international working group of HyMeX (HYdrological cycle in the Mediterranean Experiment)  
2009-to date Member of the NASA PMM (Precipitation Measurement Missions) Science Team, PI of the Israeli team.  
2015-to date Member of the precipitation committee of the hydrology section of AGU  
2012-2013: Adjunct Research Scientist, Lamont-Doherty Earth Observatory, Columbia University

**TEACHING- general field and/or courses names if wishes**

Introduction to hydrology, Surface water hydrology, Modeling environmental systems, Advanced statistics

**LIST OF PUBLICATION or Google scholar site****BOOKS/EDITED VOLUMES:****JOURNAL ARTICLES:**

1. **Morin E.**, Enzel Y., Shamir U. and Garti R. (2001) The Characteristic Time Scale for Basin Hydrological Response Using Radar Data. *J. Hydrol.*, 252, 85-99.
2. Dayan U., Ziv B., Margalit A., **Morin E.** and Sharon D. (2001) A Severe Autumn Storm Over the Middle-East: Tropical-Extratropical Interaction, Mesoscale Convection and Topographic Effects. *Theor. Appl. Climatol.*, 69(1/2), 103-122.
3. **Morin E.**, Georgakakos K. P., Shamir U., Garti R. and Enzel Y. (2002) Objective, Observational-based, Automatic, Estimation of the Catchment Response Time Scale. *Water Resour. Res.*, 38(10), 1212-1227.
4. **Morin E.**, Krajewski W. F., Goodrich D. C., Gao X., and Sorooshian S. (2003) Estimating Rainfall Intensities from Weather Radar Data: The Scale Dependency Problem. *J. Hydrometeorol.*, 4(5), 782-797.
5. **Morin E.**, Georgakakos K. P. Shamir U., Garti R., and Enzel Y. (2003) Investigating the Effect of Catchment Characteristics on the Response Time Scale Using Distributed Model and Weather Radar Information. In: Y. Tachikawa, B. E. Vieux, K. P. Georgakakos & Eiichi Nakakita (eds). Weather Radar Information and Distributed Hydrological Modeling . *IAHS Publ.* no. 282. p. 177–185.
6. BenDavid-Novak H., **Morin E.** and Enzel Y. (2004) Modern Extreme Storms and the Rainfall Thresholds for Initiating Debris Flows on the Hyperarid Western Escarpment of the Dead Sea, Israel. *Geol. Soc. Am. Bull.*, 116, 718-728.
7. Amitai E., Nystuen J. A., Liao L., Meneghini R., and **Morin E.** (2004) Uniting Space, Ground, and Underwater Measurements for Improved Estimates of Rain Rates. *IEEE Geoscience and Remote Sensing Letters*, 1(2), 35-38.
8. Shamir E., Imam B., **Morin E.**, Gupta H. V. and Sorooshian S. (2005) The Role of Hydrograph Indices in Parameter Estimation of Rainfall-Runoff Models. *Hydrol. Process.*, 19, 2187–2207.
9. **Morin E.**, Maddox R. A., Goodrich D. C., and Sorooshian S. (2005) Radar Z-R Relationship for Summer Monsoon Storms in Arizona. *Weather Forecast.*, 20(4), 672-679.
10. **Morin E.**, Goodrich D. C., Maddox R. A., Gao X., Gupta H. V., and Sorooshian S. (2005) Rainfall Modeling for Integrating Radar Information into Hydrological Model. *Atmospheric Science Letters*, 6(1), 23-30.
11. **Morin E.**, Goodrich D. C., Maddox R. A., Gao X., Gupta H. V., and Sorooshian S. (2006) Spatial Patterns in Thunderstorm Rainfall Events and their Coupling with Watershed Hydrological Response. *Adv. Water Resour.*, 29, 843–860.
12. Dayan U. and **Morin E.** (2006) Flash Flood-producing Rainstorms over the Dead Sea: A Review. In: Enzel, Y., Agnon, A., and Stein, M., (Editors). New Frontiers in Dead Sea Paleoenvironmental Research, *Geological Society of America Special Paper* 401, 53-62.
13. Karklinsky M. and **Morin E.** (2006) Spatial Characteristics of Radar-derived Convective Rain Cells over Southern Israel. *Meteorol. Z.*, 15(5), 513-520.
14. **Morin E.** and Gabella M. (2007) Radar-based Quantitative Precipitation Estimation over Mediterranean and dry Climate Regimes. *J. Geophys. Res.* 112, D20108, doi:10.1029/2006JD008206.
15. **Morin E.**, Harats N., Jacoby Y., Arbel S., Getker M., Arazi A., Grodek T., Ziv B. and Dayan U. (2007) Studying the Extremes: Hydrometeorological Investigation of a Flood-causing Rainstorm over Israel. *Adv. Geosci.*, 12, 107–114.
16. **Morin E.** Jacoby Y., Navon S., Bet-Halachmi E. (2009) Towards Flash Flood Prediction in the Dry Dead Sea Region Utilizing Radar Rainfall Information. *Adv. Water Resour.* 32, 1066-1076.

17. **Morin E.**, Grodek T., Dahan O., Benito G., Kulls C., Jacoby Y., Van Langenhove G., Seely M., and Enzel Y. (2009) Flood Routing and Alluvial Aquifer Recharge Along the Ephemeral Arid Kuiseb River, Namibia. *J. Hydrol.*, 368, 262-275.
18. Bahat Y., Grodek T., Lekach J., and **Morin E.** (2009) Rainfall-runoff Modeling in a Small Hyper-arid Catchment. *J. Hydrol.*, 373, 204-217.
19. Kurtzman D., Navon S. and **Morin E.** (2009) Improving interpolation of daily precipitation for hydrologic modeling: spatial patterns of preferred interpolators. *Hydrol. Process.*, DOI: 10.1002/hyp.7442.
20. Yair Y., Lynn B., Price C., Kotroni V., Lagouvardos K., **Morin E.**, Mugnai A. and Llasat M. C. (2010) Predicting Lightning Density in Mediterranean Storms Based on the WRF Model Dynamic and Microphysical Fields. *J. Geophys. Res.*, 115, D04205, doi:10.1029/2008JD010868.
21. Gerardo B., Rohde R., Seely M., Kulls C., Dahan O., Enzel Y., Todd S., Botero B., **Morin E.**, Grodek T. and Roberts C. (2010) Management of Alluvial Aquifers in Two Southern African Ephemeral Rivers: Implications for IWRM *Water Resour. Manage.*, 24, 641–667, DOI 10.1007/s11269-009-9463-9.
22. Sheffer N. A., Dafny E., Gvirtzman H., Navon S., Frumkin A. and **Morin E.** (2010) The Hydrometeorological DReAM (Daily Recharge Assessment Model) for the Western Mountain Aquifer (WMA), Israel. *Water Resour. Res.*, VOL. 46, W05510, doi: 10.1029/2008WR007607.
23. Rozalis S., **Morin E.**, Yair Y., and Price C. (2010) Flash flood prediction using an uncalibrated hydrological model and radar rainfall data in a Mediterranean watershed under changing hydrological conditions. *J. Hydrol.*, 394, 245–255.
24. Gabella M., **Morin E.** and Notarpietro R. (2011) Using TRMM Spaceborne Radar as a Reference for Compensating Ground-based Radar Range Degradation: Methodology Verification Based on Rain Gauges in Israel. *J. Geophys. Res.*, 116, D02114, doi:10.1029/2010JD014496.
25. Yakir H. and **Morin E.** (2011) Hydrologic response of a semi-arid watershed to spatial and temporal characteristics of convective rain cells. *Hydrol. Earth Syst. Sci.*, 15, 393–404, doi:10.5194/hess-15-393-2011.
26. Sheffer N. A., Cohen M., **Morin E.**, Grodek T., Gimburg A., Magal E., Gvirtzman H., Nied M., Isele D., and Frumkin A. (2011) Integrated Cave Drip Monitoring for Epikarst Recharge Estimation in a Dry Mediterranean Area, Sif Cave – Israel, *Hydrol. Process.*, 25(18), 2837-2845, DOI: 10.1002/hyp.8046.
27. Price C, Yair Y., Mugnai A., Lagouvardos K., Llasat M. C., Michaelides S., Dayan U., Dietrich S., Galanti E., Garrote L., Harats N., Katsanos D., Kohn M., Kotroni V., Llasat-Botija M., Lynn B., Mediero L., **Morin E.**, Nicolaidis K., Rozalis S., Savvidou K., and Ziv B. (2011) The FLASH Project: Using Lightning Data to Better Understand and Predict Flash Floods, *Environmental Science & Policy*, 14, 898-911.
28. **Morin E.** (2011) To know what we cannot know: Global mapping of minimal detectable trends in annual precipitation. *Water Resour. Res.*, 47, W07505, doi:10.1029/2010WR009798.
29. Price C., Yair Y., Mugnai A., Lagouvardos K., Llasat M. C., Michaelides S., Dayan U., Dietrich S., Galanti E., Garrote L., Harats N., Katsanos D., Kohn M., Kotroni V., Llasat-Botija M., Lynn B., Mediero L., **Morin E.**, Nicolaidis K., Rozalis S., Savvidou K., and Ziv B. (2011) Using Lightning Data to Better Understand and Predict Flash Floods in the Mediterranean, *Surv. Geophys.* 32, 733–751, doi:10.1007/s10712-011-9146-y.
30. Shohami D., Dayan U. and **Morin E.** (2011) Warming and drying of the eastern Mediterranean: Additional evidence from trend analysis, *J. Geophys. Res.*, 116, D22101, doi:10.1029/2011JD016004.
31. **Morin E.** and Yakir H. (2012) The flooding potential of convective rain cells, *IAHS Publ.* no. 351.
32. Peleg N., **Morin E.**, Gvirtzman H. and Enzel Y. (2012) Rainfall, spring discharge and past

- human occupancy in the Eastern Mediterranean, *Climatic Change*, DOI 10.1007/s10584-011-0232-4.
33. Grodek T., Jacoby Y., **Morin E.** and Katz O. (2012) Effectiveness of exceptional rainstorms on a small Mediterranean basin, *Geomorphology*, 159–160, 156-168, doi:10.1016/j.geomorph.2012.03.016.
  34. Tarolli P., Borga M., **Morin E.** and Delrieu G. (2012) Analysis of flash flood regimes in the North-Western and South-Eastern Mediterranean regions, *Nat. Hazard Earth Sys.*, 12(5), 1255-1265, doi: 10.5194/nhess-12-1255-2012.
  35. Flaounas E., Drobinski P., Borga M., Calvet J. C., Delrieu G., **Morin E.**, Tartari G. and Toffolon R. (2012) Assessment of gridded observations used for climate model validation in the Mediterranean region: the HyMeX and MED-CORDEX framework, *Environ. Res. Lett.*, 7, 024017, doi:10.1088/1748-9326/7/2/024017.
  36. Peleg N. and **Morin E.** (2012) Convective rain cells: Radar-derived spatio-temporal characteristics and synoptic patterns over the Eastern Mediterranean. *J. Geophys. Res.*, 117, D15116, doi:10.1029/2011JD017353.
  37. Gabella M., **Morin E.**, Notarpietro R., and Michaelides S. (2013) Winter precipitation fields in the Southeastern Mediterranean area as seen by the Ku-band spaceborne weather radar and two C-band ground-based radars, *Atmos. Res.*, 119, 120-130, doi: 10.1016/j.atmosres.2011.06.001.
  38. Shamir E., Ben-Moshe L., Ronen A., Grodek T., Enzel Y., Georgakakos K. P., and **Morin E.** (2013) Geomorphology-Based Index for detecting minimal flood stages in arid alluvial streams, *Hydrol. Earth Syst. Sci.*, 17, 1021–1034, doi:10.5194/hess-17-1021-2013.
  39. Peleg N., Ben-Asher M., and **Morin E.** (2013) Radar subpixel-scale rainfall variability and uncertainty: lessons learned from observations of a dense rain-gauge network, *Hydrol. Earth Syst. Sci.*, 17, 2195–2208, doi:10.5194/hess-17-2195-2013.
  40. **Morin E.** and Yakir H. (2014) Hydrological impact and potential flooding of convective rain cells in a semi-arid environment, *Hydrological Sciences Journal*, DOI: 10.1080/02626667.2013.841315.
  41. Karran D., Adamowski, J. F. and **Morin E.** (2014) Multi-step streamflow forecasting using data-driven non-linear methods in contrasting climate regimes, *J. Hydroinformatics*, 16(3), 671-689, doi: 10.2166/hydro.2013.042
  42. Rinat Y., Matmon A., Arnold M., Aumaitre G., Bourles D., Keddadouche K., Porat N., **Morin E.**, Finkel R. C. (2014) Holocene rockfalls in the southern Negev Desert, Israel and their relation to Dead Sea fault earthquakes. *Quaternary Res.*, <http://dx.doi.org/10.1016/j.yqres.2013.12.008>
  43. Peleg N, and **Morin E.** (2014) Stochastic convective rain-field simulation using a high-resolution synoptically conditioned weather generator (HiReS-WG). *Water Res. Res.* doi: 10.1002/2013wr014836.
  44. Peleg N, Bartov M., and **Morin E.** (2015) CMIP5-predicted Climate Shifts over the East Mediterranean: Implications for the Transition Region between Mediterranean and Semi-arid Climates. *Inter. J. Clim.*, 35(8), 2144-2153 doi: 10.1002/joc.4114.
  45. Saaroni H., Ziv B., Lempert J., Gazit Y, and **Morin E.** (2015) Prolonged dry spells in the Levant region: climatologic-synoptic analysis. *Inter. J. Clim.*, 35(9), 2223-223 doi: 10.1002/joc.4143.
  46. Peleg N., Shamir E., Georgakakos K. P., and **Morin E.** (2015) A framework for assessing hydrological regime sensitivity to climate change in a convective rainfall environment: a case study of two medium-sized eastern Mediterranean catchments, Israel. *Hydrol. Earth Syst. Sci.*, 19, 567–581 doi:10.5194/hess-19-567-2015.
  47. Marra F. and Morin E. (2015) Use of radar QPE for the derivation of Intensity–Duration–Frequency curves in a range of climatic regimes. *J. Hydrol.* <http://dx.doi.org/10.1016/j.jhydrol.2015.08.064>, in press.
  48. Zidon R., Tsueda H., **Morin E.**, and Morin S. (2016) Projecting pest population dynamics

under global warming: the combined effect of inter- and intra-annual variations. Ecological Applications, <http://dx.doi.org/10.1890/15-1045.1>, in press.

49. Kottmeier C., Agnon A., Al-Halbouni D., Alpert P., Corsmeier U., Dahm T., Eshel A., Geyer S., Haas M., Holohan E., Kalthoff N., Kishcha P., Krawczyk C., Lati J., Laronne J. B., Lott F., Mallast U., Merz R., Metzger J., Mohsen A., **Morin E.**, Nied M., Rödiger T., Salameh E., Sawarieh A., Shannak B., Siebert C., and Weber M. (2016) New perspectives on interdisciplinary earth science at the Dead Sea: the DESERVE project, Science of the Total Environment, doi: 10.1016/j.scitotenv.2015.12.003, in [ress.

#### **BOOK CHAPTERS:**

1. Borga M. and Morin E. (2014) Characteristics of Flash Flood Regimes in the Mediterranean Region, In: Diodato N. and Bellocchi G. (Editors) Storminess and Environmental Change. Advances in Natural and Technological Hazards Research, Vol. 39, Springer Netherlands, 65-76.