

## Curriculum Vitae

**Shira Raveh-Rubin**

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### A. PERSONAL DETAILS

**Date and Place of Birth:** 12 May 1980, Jerusalem, Israel  
**Citizenship:** Israeli  
**Military service:** January 1999 – January 2001  
**Address:** Department of Earth and Planetary Sciences  
Weizmann Institute of Science  
Rehovot 76100, Israel  
**Office Tel.:** +972 8 934 3147  
**Email:** [shira.raveh-rubin@weizmann.ac.il](mailto:shira.raveh-rubin@weizmann.ac.il)  
**Website:** <https://www.weizmann.ac.il/EPS/raveh-rubin/>  
**ORCID:** 0000-0001-6244-8693

### B. EDUCATION

2012-2017 Post-doctoral fellow, Institute for Atmospheric and Climate Science, ETH Zurich, Switzerland. Host: Prof. Heini Wernli

2007-2012 PhD, Department of Environmental Sciences and Energy Research, Weizmann Institute of Science, Israel  
Thesis title: *Anomalous, non-conservative chemical transport in saturated porous media.*  
Advisor: Prof. Brian Berkowitz

2004-2006 M.Sc. in Atmospheric Sciences, the Hebrew University of Jerusalem, Israel, *cum laude*  
Thesis title: *Characterizing Tropical Plumes over eastern North Africa that transport moisture to the eastern Mediterranean and Israel.*  
Advisors: Prof. Nathan Paldor and Dr. Baruch Ziv

2001-2004 B.Sc. in Atmospheric Sciences (major) and Physics (minor), the Hebrew University of Jerusalem, Israel, *cum laude*

### C. EMPLOYMENT HISTORY

2017-present Senior scientist, Department of Earth and Planetary Sciences, Weizmann Institute of Science

2004 Research assistant of Dr. Baruch Ziv, Department of Natural Sciences, the Open University of Israel

2002-2004 Research assistant of Prof. Nathan Paldor, Department of Atmospheric Sciences, the Hebrew University of Jerusalem

### D. ACADEMIC ADMINISTRATION

2022-present Member of the Hiring Committee, Department of Earth and Planetary Sciences, Weizmann Institute of Science

- 2022-present Member of the Green Campus presidential committee, Weizmann Institute of Science
- 2021-present Member of the Board of Studies, Faculty of Chemistry, Weizmann Institute of Science

## **E. OTHER APPOINTMENTS**

- 2023-present Member, International Commission on Dynamic Meteorology (ICDM) of the International Association of Meteorology and Atmospheric Sciences (IAMAS)
- 2023-present Management committee member, COST Action CA22162: FutureMed: A transdisciplinary network to bridge climate science and impacts on society
- 2020-present Working group leader, management committee member and short-term scientific missions evaluation committee member, COST Action CA19109: European network for Mediterranean cyclones in weather and climate
- 2020-present Member of AcademiaNet
- 2020-present Member and working group leader of the Gender Equality Together forum, Weizmann Institute of Science
- 2019-present Co-editor of the journal Weather and Climate Dynamics (WCD), Copernicus Publishing, European Geosciences Union (EGU)
- 2018-present Examination committee member for M.Sc. and PhD theses submitted to Technische Universität Bergakademie Freiberg, Weizmann Institute of Science, Tel-Aviv University, Hebrew University of Jerusalem
- 2018-2022 Task team member of the High-Impact Weather Project of the World Weather Research Programme (WWRP), World Meteorological Organization (WMO)
- 2013-2020 HyMeX (HYdrological cycle in the Mediterranean EXperiment), member of the science teams: Sources and Transport of Water Vapour, Heavy Precipitation, Mediterranean Cyclones

## **Teaching experience**

- 2022-present Lecturer, Weizmann Institute of Science  
Graduate course: Dynamical meteorology
- 2016 Guest lecturer, ETH Zurich  
Graduate course: Dynamics of large-scale atmospheric flow
- 2004-2006 Teaching assistant, department of atmospheric sciences, the Hebrew University of Jerusalem  
Undergraduate courses: Introduction to climatology, Physical oceanography, Climate changes, Earth as a planet
- 2017-present Outreach lectures in schools and for the open public: Israel Academy of Sciences and Humanities, the Israel Young Academy, Academic community for Israeli Society (“BaShaar”), De-Shalit Rehovot, Bechor Levi Rehovot, Hashita highschool Rehovot, JFS London, American School in London, Alpha, Ofakim, Madan Bareshet programmes, Davidson Institute, 1.5°C Climate Initiative (Hebrew University), Big Little Science (“Mada Gadol, Baktana”), Haaretz newspaper, Kan radio

## F. INTERNATIONAL RECOGNITION

### Awards and Prizes

- 2023 Scientific Council Prize, Weizmann Institute of Science
- 2012 Otto Schwarz Memorial Graduate Scholarship, Weizmann Institute of Science
- 2010-2011 Ministry of Science and Technology excellence fellowship for the advancement of women in science
- 2008, 2011 Rieger-JNF Fellowship for Environmental Studies
- 2005 Schindel Prize for excellence in M.Sc. research from the Atmospheric Sciences department, the Hebrew University of Jerusalem
- 2001 Excellence award for new students, Earth Sciences Institute, the Hebrew University of Jerusalem

### International organizing committees, Membership in juries, Review boards

- 2014-present Reviewer of manuscripts for scientific journals: *Annales Geophysicae*, *Atmosphere*, *Atmospheric Research*, *Atmospheric Science Letters*, *Climate Dynamics*, *Earth System Dynamics*, *Earth System Science Data*, *Geophysical Research Letters*, *Hydrology and Earth System Sciences*, *International Journal of Climatology*, *Journal of Geophysical Research – Atmospheres*, *Meteorology and Atmospheric Physics*, *Natural Hazards and Earth System Sciences*, *npj Climate and Atmospheric Science*, *Quarterly Journal of the Royal Meteorological Society*, *Quaternary Science Reviews*, *Weather and Climate Dynamics*
- 2024 Convener of the session “UP1.1: Atmospheric dynamics, predictability and extremes”, European Meteorological Society Annual Meeting, 2-6 September 2024, Barcelona, Spain
- 2024 Co-organizer and tutor of the 3<sup>rd</sup> MedCyclones Workshop and Training School, 15-19 July 2024, Frascati, Italy
- 2024 Review board member of the Azrieli Foundation
- 2023 Panel member for the evaluation of proposals to the Israel Science Foundation (ISF)
- 2023 Panel member for the evaluation of research proposals to Israel Ministry of Innovation, Science and Technology (MOST)
- 2023 Convener and chair of the session “UP1.1: Atmospheric dynamics, predictability and extremes”, European Meteorological Society Annual Meeting, 4 September 2023, Bratislava, Slovakia
- 2023 Session chair of “M28d - Advances in Dynamic Meteorology”, IUGG23: The 28<sup>th</sup> general assembly of the international union of geodesy and geophysics, 15 July 2023, Berlin, Germany
- 2023 Co-organizer of the 2<sup>nd</sup> MedCyclones Workshop and Training School, 26-30 June 2023, Toulouse, France
- 2022 Co-organizer of the 1<sup>st</sup> MedCyclones Workshop and Training School, 27 June - 2 July 2022, Athens, Greece
- 2022 Lead organizer of the conference “Mediterranean Cyclones: Dynamics, Impact and Prediction at Weather and Climate Scales” (virtual), 3 January 2022

- 2021 Reviewer for the US National Science Foundation
- 2017-2021 Co-organizer of the weekly seminar series of the Department of Earth and Planetary Sciences, Weizmann Institute of Science
- 2020 Co-organizer of the first North Atlantic Waveguide, Dry Intrusion, and Downstream Impact Campaign (NAWDIC) workshop (virtual), 23-24 November 2020
- 2019 Co-organizer of the Israel-Italy Scientific Workshop “Mediterranean Climate: Changes and Challenges”, Tel Aviv, Israel, 5 November 2019
- 2019 Co-organizer of an international workshop “Climate and Wave Dynamics”, Eilat, Israel, 22-26 September 2019
- 2019 Organizer of a symposium on “The atmospheric water cycle: underlying processes and future projections”, Department of Earth and Planetary Sciences, Weizmann Institute of Science, 5 May 2019
- 2018 Convener and chair of the session “Understanding weather extremes“, ISEES Annual Conference for Science and the Environment, Weizmann Institute of Science, 20-21 June 2018
- 2018 Session chair in the 11<sup>th</sup> HyMeX Workshop, Lecce, Italy, 30 May 2018
- 2007 Co-organizer and session chair, the 6<sup>th</sup> Conference on Active Research by Environmental Science Students (CARESS), Weizmann Institute of Science, 29 May 2007

## Talks at international meetings

### Invited talks

Community efforts for understanding and predicting hazards across the Atlantic-Euro-Mediterranean regions (**keynote**, *HIWeather Final Conference, Munich, Germany, 10 September 2024*).

Improving prediction of extreme weather in a changing climate (*Fragile Society - Crisis Throughout History, Climate, Environment, and Food Security, The Israel Academy of Sciences and Humanities, Jerusalem, Israel, 24 October 2023, postponed*)

Dynamics of dry intrusion air streams and their relevance for extreme weather (*IUGG23: The 28<sup>th</sup> general assembly of the international union of geodesy and geophysics, Berlin, Germany, 16 July 2023*)

Process-based classification of Mediterranean cyclones (**keynote**, *MetMed: 9th International Conference on Meteorology and Climatology of the Mediterranean, Genoa, Italy, 23 May 2023*)

Process understanding of extreme weather events: the local and non-local role of extratropical cyclones (“*Rare events in Physics and Climate*” international conference, *Sde Boker, Israel, 12 December 2022*)

Dynamics of dry intrusion air streams and their relevance for extreme weather (**keynote**, *European Meteorological Society Annual Meeting, Bonn, Germany, 8 September 2022*)

The importance of cyclones for heavy precipitation in the Mediterranean (*Israel-Italy Scientific Workshop “Mediterranean Climate: Changes and Challenges”, Tel Aviv, Israel, 5 November 2019*)

Climatology and dynamics of the link between dry intrusions and cold fronts (*European Geosciences Union General Assembly, Vienna, Austria, 9 April 2019*)

Wind: the journey of air on Earth (*The Israel Academy of Sciences and Humanities annual meeting, Jerusalem, Israel, 4 February 2019*)

Current challenges in understanding and predicting storms (*Fluid flows, from Graphene to planet atmospheres, International workshop, Weizmann Institute of Science, 19 December 2018*)

Understanding the weather (*5th How To Change the World Conference, London, UK, 6 December 2018*)

The relevance of dry-air intrusions for high-impact weather (*High-Impact Weather Workshop, WMO, Beijing, China, 21 November 2018*)

The dynamical and thermodynamical links between North Atlantic cyclones and Mediterranean cyclones (*Stormtracks 2018 workshop, Utö, Stockholm, Sweden, 29 August 2018*)

Climatology of dry air intrusions and their relation to strong surface winds in extratropical cyclones (**keynote**, *5th European storms workshop STORMEx, Bern, Switzerland, 31 August 2015*)

Anomalous, non-conservative chemical transport in saturated porous media. (*Research conference of the Israeli Water Authority, Maale Hahamisha, Israel, 21 June 2011*)

### **Contributed talks**

Dynamics of dry intrusion air streams and their relevance for extreme weather (*JSPS-ISF symposium, University of Tokyo, Japan, 27 September 2023*)

The dry intrusion as a link between the tropopause and low-level high impact weather (*NAWDIC-HALO Workshop, Karlsruhe Institute of Technology, Germany, virtual, 12 May 2023*)

The role of cyclones for persistent warm and dry extremes in the Eastern Mediterranean (*JSPS - ISF (Japan - Israel) Symposium in Atmospheric Dynamics and Climate, Weizmann Institute of Science, Rehovot, Israel, 27 November 2022*)

Understanding weather extremes for improving impact prediction – an international effort (*combined oral/poster presentation, MaltaX conference: Frontiers of Science, Malta, 7 November 2022*)

North Atlantic Waveguide, Dry Intrusion, and Downstream Impact Campaign: updates and state of the art (*Atmospheric River Reconnaissance Workshop 2022, Scripps Seaside Forum, La Jolla, CA, USA, virtual, 26 October 2022*)

The role of Mediterranean cyclones for persistent warm and dry extremes over the Eastern Mediterranean during winter (*1<sup>st</sup> MedCyclones Workshop, Athens, Greece, 29 June 2022*)

The link between Rossby-wave breaking, cyclones, severe winds and air-sea interaction: the case of the Mistral wind (*Stormtracks2022: Midlatitude storm-tracks workshop, Saint-Pierre-d'Oleron, France, 31 May 2022*)

Persistent warm and dry extremes over the Eastern Mediterranean during winter: the role of upstream Rossby wave pattern (*European Geosciences Union General Assembly, Vienna, Austria, virtual, 27 May 2022*)

Dry air intrusions link Rossby wave breaking to large-scale dust storms in North Africa (*European Geosciences Union General Assembly, Vienna, Austria, virtual, 23 May 2022*)

Persistent dry and warm winter events over Israel and their relation to Atlantic and Mediterranean cyclones (*Mediterranean Cyclones: Dynamics, Impact and Prediction at Weather and Climate Scales conference, virtual, 3 January 2022*)

The importance of a series of Rossby wave breaking for dust transport near Mediterranean cyclones (*1st Meeting on Mediterranean Cyclones and Aerosol, Lecce, Italy, virtual, 20 September 2021*)

Dry intrusions: State of the art and open questions for NAWDIC (*NAWDIC Workshop, virtual, 23 November 2020*)

The influence of dry intrusions on the lower troposphere, boundary layer and ocean surface (*First virtual conference on atmospheric dynamics ViCoDyn1, virtual, 16 June 2020*)

Climatology and dynamics of the link between dry intrusions and cold fronts (*19<sup>th</sup> Cyclone Workshop, Kloster Seeon, Germany, 30 September 2019*)

The influence of dry intrusions on the PBL: Insights from a global Lagrangian climatology and relevance for ACE-ENA (*ACE-ENA Workshop, Brookhaven National Lab, NY, USA, 30 January 2019*)

The dynamical link between North Atlantic cyclones and intense Mediterranean cyclones (*GFDdays workshop, Sde Boker, Israel, 23 January 2019*)

The importance of Atlantic cyclones for intense Mediterranean cyclones (*11<sup>th</sup> HyMeX Workshop, Lecce, Italy, 31 May 2018*)

Climatology and dynamics of the link between dry intrusions and cold fronts (*Israel Meteorological Society annual meeting, Hebrew University in Jerusalem, 13 March 2018*)

Dry intrusions and their role for intense ocean evaporation and for triggering severe surface weather (*Bilateral meeting on Warm Conveyor Belts, ECMWF, Reading, UK, 23 May 2017*)

Dry intrusions: Lagrangian climatology and impact on the boundary layer (*European Geosciences Union General Assembly, Vienna, Austria, 26 April 2017*)

Initiative: Frontal heavy precipitation events – dynamical mechanism and moisture pathways (*HyMeX Mediterranean Cyclones science-team meeting, Paris, France, 10 March 2017*)

Dry air intrusions: climatology and their relevance for strong surface winds (*15<sup>th</sup> Plinius Conference on Mediterranean Risks, Giardini Naxos, Italy, 9 June 2016*)

The role of Mediterranean cyclones for producing large-scale precipitation extremes (*15<sup>th</sup> Plinius Conference on Mediterranean Risks, Giardini Naxos, Italy, 8 June 2016*)

Climatology of dry air intrusions and their relation to strong surface winds in extratropical cyclones (*17<sup>th</sup> Cyclone Workshop, Pacific Grove, CA, USA, 29 October 2015*)

Large-scale surface wind extremes in the Mediterranean (*4<sup>th</sup> European storms workshop STORMEx, Lisbon, Portugal, 8 September 2014*)

Large-scale surface wind extremes in the Mediterranean (*WWRP Open Science Conference, Montreal, Canada, 20 August 2014*)

Governing mechanisms of large-scale precipitation extremes – COSMO sensitivity experiments (*Swiss COSMO user workshop, MeteoSwiss, Zurich, Switzerland, 27 November 2013*)

The role of Mediterranean cyclones for producing large-scale precipitation extremes (*7<sup>th</sup> HyMeX Workshop, Cassis, France, 10 October 2013*)

The role of Mediterranean cyclones for producing large-scale precipitation extremes (*16<sup>th</sup> Cyclone Workshop, Sainte-Adele, Canada, 24 September 2013*)

### **Invited seminars**

TBD (*Climate seminar series, MeteoSwiss Zurich, Switzerland, 10 December 2024*)

Dynamics of dry intrusions and their relevance for high-impact weather (*University of Bern, Switzerland, 12 March 2024*)

Dynamics of dry intrusions and their relevance for high-impact weather (*Israel Meteorological Service, Bet-Dagan, Israel, 31 January 2024*)

Dynamics of dry intrusions and their relevance for high-impact weather (*Kyoto University, Japan, 5 October 2023*)

Process-based classification of Mediterranean cyclones (*Kyoto University, Japan, 5 October 2023*)

Dynamics of dry intrusions and their relevance for high-impact weather (*Topics in Atmospheric and Oceanic Sciences seminar, Stony Brook University, US, virtual, 20 September 2023*)

Dynamics of dry intrusions and their relevance for high-impact weather (*Free University of Berlin, Germany, 17 July 2023*)

Dynamics of dry intrusions and their relevance for high-impact weather (*LEGOS seminar, CNRS Toulouse, France, 26 June 2023*)

The links between winter weather systems and local boundary-layer structure in Israel: the case of persistent warm and dry extremes (*Israel Meteorological Service, Bet Dagan, Israel, 1 February 2023*)

Dynamics of dry intrusions and their relevance for extreme weather (*Climate, Atmosphere, and Ocean Seminar, Hebrew University of Jerusalem, Israel, 26 January 2023*)

The role of dry intrusions in large-scale Saharan dust transports and air-sea interaction (*Department of Meteorology MISU seminar, Stockholm University, 19 May 2022*)

Large-scale Saharan dust transport or hot winter days: new insight from a Lagrangian perspective (*Geological Survey of Israel seminar, Jerusalem, Israel, virtual, 6 March 2022*)

The link between planetary boundary layer characteristics and extratropical weather systems (*Environmental Engineering Departmental Seminar, Technion, Israel, 23 November 2021*)

The link between planetary boundary layer characteristics and extratropical weather systems (*Climate, Atmosphere, and Ocean Seminar, Hebrew University of Jerusalem, Israel, virtual, 13 May 2021*)

The link between planetary boundary layer characteristics and extratropical weather systems during winter (*Institute of Soil, Water and Environmental Science seminar, Volcani Center, Israel, virtual, 17 February 2021*)

How does synoptic-scale descent influence the planetary boundary layer? (*LMD Seminar, École Polytechnique, Paris, France, 28 November 2019*)

The link between dry air intrusions and frontal precipitation and winds (*Ludwig Maximilian University of Munich, Waves to Weather seminar, Munich, Germany, 16 May 2019*)

The link between dry air intrusions and frontal precipitation and winds (*Karlsruhe Institute of Technology, IMK-TRO, Waves to Weather seminar, Karlsruhe, Germany, 14 May 2019*)

The link between dry air intrusions and frontal precipitation and winds (*Institute for Atmospheric Physics, University of Mainz, Mainz, Germany, 13 May 2019*)

The role of dry air intrusions in frontal precipitation and winds (*The Interuniversity Institute for Marine Sciences in Eilat, Israel, 17 January 2019*)

The role of dry air intrusions in frontal precipitation and winds (*Department of Solar Energy and Environmental Physics, Institute for Desert Research, Ben-Gurion University, Israel, 11 December 2018*)

The importance of warm conveyor belts for Mediterranean cyclones (*Department of Geosciences, Tel Aviv University, Israel, 19 March 2018*)

Dry air intrusions: climatology and their relevance for extreme weather (*Institute of Geography, University of Bern, Bern, Switzerland, 13 December 2017*)

Dry air intrusions: climatology and their relevance for strong surface winds in the Euro-Mediterranean region (*Israel Meteorological Service, Bet Dagan, Israel, 22 November 2017*)

Dry intrusions and warm conveyor belts: feature-based climatologies for understanding extratropical weather dynamics (*Department of Earth and Planetary Sciences, Weizmann Institute of Science, Israel, 4 January 2017*)

Dry air intrusions: climatology and their relevance for strong surface winds in the Euro-Mediterranean region (*Institute of Earth Sciences, Hebrew University of Jerusalem, Israel, 9 November 2016*)

Dry air intrusions: climatology and their relevance for strong surface winds in the Euro-Mediterranean region (*Department of Geosciences, Tel Aviv University, Israel, 7 November 2016*)

Dry air intrusions: climatology and their relevance for strong surface winds in the Euro-Mediterranean region (*Faculty of Civil and Environmental Engineering, Technion, Israel, 28 June 2016*)

Dry air intrusions: climatology and their relevance for strong surface winds in the Euro-Mediterranean region (*Department of Earth and Planetary Sciences, Weizmann Institute of Science, Israel, 27 December 2015*)

Anomalous, non-conservative chemical transport in saturated porous media. (*Environmental Health Sciences seminar, Hadassah College, Jerusalem, Israel, December 2010*)

## **G. SCIENTIFIC PRODUCTIVITY**

### **Research grants**

2024-2025 Swiss National Science Foundation Scientific Exchanges with the University of Bern (18,000 US\$)



- 2024-2025 Hans Sigrist Foundation support for a research visit to the University of Bern (6000 US\$)
- 2024-2026 MBZUAI-WIS joint program for artificial intelligence research flagship project: “AI approaches for forecasting of regional extreme weather events: Implementations to the EMME” (450,000 US\$)
- 2023-2027 Israel Science Foundation, Individual Research Grant 1242/23: “Classification of Eastern Mediterranean cyclones: lifecycle, impact and predictability” (237,600 US\$)
- 2022-2027 European Research Council starting grant: “Extratropical-Tropical interaction (ExTrA): A unified view on the extratropical impact on the subtropics and tropics at weather timescales” (1,687,500 US\$)
- 2022-2024 Weizmann-ETH Zurich Bridge Program: “The role of jet dynamics in shaping midlatitude storm tracks, regional climate change and weather extremes” (75,000 US\$)
- 2022-2024 Data Science Research Center, VATAT (59,270 US\$)
- 2022-2023 Swiss National Science Foundation: “Compound weather events associated with Mediterranean Cyclones - climatology and large-scale climate drivers (COMPOUND-MED)”, project partner
- 2020-2021 Data Science Research Center, VATAT (12,330 US\$)
- 2020-2022 Weizmann-UK Joint Programme: “Life cycle of atmospheric fronts, associated circulation and impact” (50,000 US\$)
- 2020-2021 German-Israeli Foundation Young Scientists’ Program Grant I-1087-307.6-2018: “Dry intrusions role in the Earth's water cycle” (28,649 US\$)
- 2019-2022 Weizmann-CNRS Collaboration Program: “The Mistral wind: large-scale controlling mechanisms and impact on air-sea interaction” (88,400 US\$)
- 2018-2022 Israel Science Foundation, Individual Research Grant 1347/18: “Multi-scale dynamical interactions of dry intrusions” (218,500 US\$)
- 2018 Israel Science Foundation, New-Faculty Equipment Grant 2179/18 (259,700 US\$)
- 2015-2017 Marie Heim-Vögtlin grant, Swiss National Science Foundation: “Dry intrusions: climatology, dynamics and link to extreme weather” (255,000 US\$)
- 2012-2014 ETH Zurich Postdoctoral Fellowship (Co-funded by Marie Curie actions): “Governing mechanisms of large-scale strong winds and heavy precipitation in the Mediterranean region” (200,000 US\$)
- 2009-2011 Israel Water Authority research grant: “Anomalous transport of sorbing solutes in saturated porous media” (28,000 US\$)

## **Supervision of students**

### Ongoing

### *Post-doctoral fellows*

- Pinelopi Loizou, 2023-present

### *PhD students*

- Yonatan Givon, 2019-present (PhD student fellow of Sustainability and Energy Research Initiative, WIS)
- Tsruya Sadeh Yaari, 2023-present
- Noy Klaider, 2023-present (fellow of the KKL-JNF Climate Fellowship Program for Doctoral Students on Combating the Climate Crisis)

### *MSc students*

- Tali Gens, 2023-present
- Lidiya Shendrik, 2024-present
- Yarden Cristal, 2024-present
- Yotam Menachem (co-supervisor with Dan Yakir), 2024-present

### *Visiting students (rotation or short-time stays)*

- Sagi Maor, 2023-present

### Completed

### *Post-doctoral fellows*

- Eyal Ilotoviz, 2021, WIS (receiver of the postdoctoral Dean Fellowship for excellence, currently senior climatologist at Israel Meteorological Service)
- Vered Silverman, 2021, WIS
- Leehi Magaritz-Ronen, 2021, WIS (currently assistant staff scientist in Raveh-Rubin group)
- Deepika Rai, 2022, WIS (currently project scientist, Indian institute of Science, Bangalore, India)

### *MSc theses*

- Tsruya Yaari, 2023, WIS: “Midlatitude weather-system impact on the tropical hydrological cycle”
- Noy Klaider, 2023, WIS: “Cold extremes: global climatology and driving mechanisms”
- Stav Nahum, 2021, WIS: “Dry Intrusions Initiation: Large scale governing features and forcing mechanisms”. Currently software engineer at Breezometer, Google
- Matthias Jeker, 2014, ETH Zurich. “Governing mechanisms of a selected large-scale heavy precipitation event in the Mediterranean”; co-supervisor with Heini Wernli

### *BSc theses*

- Katharina Hartmuth, 2017, ETH Zurich. “The initiation of dry air intrusions”
- Lea Beusch, 2015, ETH Zurich. “Puelche Foehn - A Case Study”; co-supervisor with Lukas Papritz and Michael Sprenger
- Yasmin Roskopf, 2014, ETH Zurich. “A case study of a heavy precipitation event in southwestern Mediterranean, September / October 1986”

### *Consultants*

- Dr. Elody Fluck (currently research fellow, European Space Agency)
- Dr. Reuven Heiblum (currently R&D Project Manager at Mobile Physics)

#### *Visiting students (rotation)*

- Lidiya Shendrik, 2024, WIS. “Implementation of Lagranto-ICON for a dry intrusion case study in the Azores”
- Yotam Menachem, 2024, WIS. “Fate of CO emitted during the 2023 Canadian fires”
- Alina Karlinsky, 2023, WIS. “Sources of CO in the New York pollution event of June 2023”
- Amir Sheffer, 2023, WIS. “Drivers of dust storms in East Asia”
- Tali Gens, 2022, WIS. “Understanding Eastern Mediterranean precipitation by classifying Mediterranean cyclones”
- Or Hess, 2022, WIS. “Classification of Mediterranean cyclones by potential vorticity”
- Erez Aviv, 2021, WIS. “Linking inter-hemispheric flows to active and break monsoon spells in India”
- Elizabeth Ruth Shehter, 2021, WIS. “Predictability of heavy precipitation under active Red Sea Trough in Israel”
- Oz Mendelsohn, 2020, WIS. “Machine-learning based classification of radiosonde profiles and their regional signature”
- Eli Windwer, 2019, WIS. “The dynamical links between cyclone Dagmar and its clustered cyclones”
- Shahar Hegyi, 2018, WIS. “The global relationship between dry intrusions and boundary layer height anomalies”
- Tsuf Lichtman, 2018, WIS. “The contribution of dry intrusions to ocean evaporation hot spots”

#### *Visiting scientists*

- Dr. Sigalit Berkovic (Israel Institute for Biological Research), 2020, mini-sabbatical at WIS
- Vlad Amihaesei (University of Iasi, Romania), 2022, Short-term scientific mission to WIS

## **LIST OF PUBLICATIONS**

\* denotes a student/group member

1. Paldor, N., **S. Rubin**, AJ. Mariano. 2007. A consistent theory for linear waves of the Shallow Water Equations on a rotating plane in mid-latitudes. *Journal of Physical Oceanography*, 37, 115-128. DOI: 10.1175/JPO2986.1
2. **Rubin S.**, B. Ziv, N. Paldor. 2007. Tropical Plumes over eastern North Africa as a source of rain in the Middle East. *Monthly Weather Review*, 135, 4135-4148. DOI: 10.1175/2007MWR1919.1
3. **Rubin S.**, B. Ziv, N. Paldor. 2007. On the dominance of changes in planetary angular momentum in large scale extra-tropical flows. *Geophysical Research Letters*, 34, L23814. DOI: 10.1029/2007GL031145

4. Paldor, N., **S. Rubin**, A.J. Mariano. 2008. A consistent theory for linear waves of the shallow-water equations on a rotating plane in midlatitudes - Reply. *Journal of Physical Oceanography*, 38, 2118-2119. DOI: 10.1175/2008JPO4015.1
5. Bijeljic B., **S. Rubin**, H. Scher, B. Berkowitz. 2011. Non-Fickian transport in porous media with bimodal structural heterogeneity. *Journal of Contaminant Hydrology*, 120-121, 213-221. DOI: 10.1016/j.jconhyd.2010.05.007
6. Kuntz BW., **S. Rubin**, B. Berkowitz, K. Singha. 2011. Quantifying solute transport at the Shale Hills Critical Zone Observatory. *Vadose Zone Journal*, 10, 843-857. DOI: 10.2136/vzj2010.0130
7. **Rubin S.**, I. Dror, B. Berkowitz. 2012. Experimental and modeling analysis of coupled non-Fickian transport and sorption in natural soils. *Journal of Contaminant Hydrology*, 132, 28-36. DOI: 10.1016/j.jconhyd.2012.02.005
8. **Raveh-Rubin S.**, Y. Edery, I. Dror, B. Berkowitz. 2015. Nickel migration and retention dynamics in natural soil columns. *Water Resources Research*, 51, 7702-7722. DOI: 10.1002/2015WR016913
9. Flaounas, E., **S. Raveh-Rubin**, H. Wernli, P. Drobinski, S. Bastin. 2015. The dynamical structure of intense Mediterranean cyclones. *Climate Dynamics*, 44, 2411-2427. DOI: 10.1007/s00382-014-2330-2
10. **Raveh-Rubin S.**, H. Wernli. 2015. Large-scale wind and precipitation extremes in the Mediterranean: a climatological analysis for 1979-2012. *Quarterly Journal of the Royal Meteorological Society*, 141, 2404-2417. DOI: 10.1002/qj.2531
11. **Raveh-Rubin S.**, H. Wernli. 2016. Large-scale wind and precipitation extremes in the Mediterranean: dynamical aspects of five selected cyclone events. *Quarterly Journal of the Royal Meteorological Society*, 142, 3097-3114. DOI: 10.1002/qj.2891
12. **Raveh-Rubin S.**, E. Flaounas. 2017. A dynamical link between deep Atlantic extratropical cyclones and intense Mediterranean cyclones. *Atmospheric Science Letters*, 18, 215-221. DOI:10.1002/asl.745
13. **Raveh-Rubin S.** 2017. Dry intrusions: Lagrangian climatology and dynamical impact on the planetary boundary layer. *Journal of Climate*, 30, 6661-6682, DOI: 10.1175/JCLI-D-16-0782.1
14. Beusch\* L., **S. Raveh-Rubin**, M. Sprenger, L. Papritz. 2018. Dynamics of a Puelche Foehn event in the Andes. *Meteorologische Zeitschrift*, 27, 67-80. DOI: 10.1127/metz/2017/0841
15. Li QM, Gabay, Y. Rubin, **S. Raveh-Rubin**, S. Rohatyn, F. Tatarinov, E. Rotenberg, E. Ramati, U. Dicken, Y. Preisler, E. Fredj, D. Yakir, E. Tas. 2019. Investigation of ozone deposition to vegetation under warm and dry conditions near the Eastern Mediterranean coast. *Science of the Total Environment*, 658, 1316-1333. DOI: 10.1016/j.scitotenv.2018.12.272
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