

Curriculum Vitae

Shira Raveh-Rubin

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
Mobile Tel.: +972 50 510 9747
Fax: +972 8 934 4124
Email: shira.raveh-rubin@weizmann.ac.il
Website: <https://www.weizmann.ac.il/EPS/raveh-rubin/>

EDUCATION

- 2007-2012 PhD, Department of Environmental Sciences and Energy Research, Weizmann Institute of Science
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, *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, *cum laude*

EMPLOYMENT HISTORY

- 2017-present Senior scientist, Department of Earth and Planetary Sciences, Weizmann Institute of Science
- 2012-2017 Post-doctoral fellow, Institute for Atmospheric and Climate Science, ETH Zurich. Host: Prof. Heini Wernli
- 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

TEACHING EXPERIENCE

- 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 (in Hebrew)
- 2017-present Outreach teaching in schools and the open public: 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”)

INTERNATIONAL RECOGNITION

- 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
- 2019-present Co-editor of the journal Weather and Climate Dynamics (WCD), Copernicus Publishing, European Geosciences Union (EGU)
- 2018-present Task team member of the High-Impact Weather Project of the World Weather Research Programme (WWRP), World Meteorological Organization (WMO)
- 2014-present Reviewer of manuscripts for scientific journals: Annales Geophysicae, Atmosphere, Atmospheric Science Letters, Climate 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, Quarterly Journal of the Royal Meteorological Society, Quaternary Science Reviews, Weather and Climate Dynamics
- 2013-2020 HyMeX (HYdrological cycle in the Mediterranean EXperiment), member of the science teams: Sources and Transport of Water Vapour, Heavy Precipitation, Mediterranean Cyclones
- 2017 Judge for the Outstanding Student Poster Award, EGU
- 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

CONFERENCES

Invited talks

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

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

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

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

Climatology and dynamics of the link between dry intrusions and cold fronts (*19th 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 (*11th 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 (*15th Plinius Conference on Mediterranean Risks, Giardini Naxos, Italy, 9 June 2016*)

The role of Mediterranean cyclones for producing large-scale precipitation extremes (*15th 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 (*17th Cyclone Workshop, Pacific Grove, CA, USA, 29 October 2015*)

Large-scale surface wind extremes in the Mediterranean (*4th 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 (*7th HyMeX Workshop, Cassis, France, 10 October 2013*)

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

Posters

The dynamical link between deep Atlantic extratropical cyclones and intense Mediterranean cyclones (*Climate and Wave Dynamics workshop, Eilat, Israel, 23 September 2019*)

The meteorological context of moisture uptakes for frontal precipitation during HyMeX (*11th HyMeX Workshop, Lecce, Italy, 31 May 2018*)

The dynamical link between deep Atlantic extratropical cyclones and intense Mediterranean cyclones (*Israel Meteorological Society annual meeting, Hebrew University in Jerusalem, 13 March 2018*)

Large-scale precipitation and surface wind extremes in the Mediterranean (*European Geosciences Union General Assembly, Vienna, Austria, 28 April 2017*)

The dynamical link between deep Atlantic extratropical cyclones and intense Mediterranean cyclones (*European Geosciences Union General Assembly, Vienna, Austria, 26 April 2017*)

Large-scale surface wind extremes in the Mediterranean (*Swiss Meteorological Society annual meeting, ETH Zurich, Switzerland, 25 November 2016*)

Large-scale surface wind extremes in the Mediterranean (*15th Plinius Conference on Mediterranean Risks, Giardini Naxos, Italy, 9 June 2016*)

Large-scale surface wind extremes in the Mediterranean (*Latsis Symposium, Zurich, Switzerland, 18 June 2014*)

Characteristic dynamics of large-scale wind and precipitation extremes in the Mediterranean (*C2SM Water Cycle in a Changing Climate Symposium, ETH Zurich, Switzerland, 1 July 2013*)

Experimental and modeling analysis of coupled non-Fickian transport and sorption in natural soils (*AGU meeting, San Francisco, USA, 5-9 December 2011*)

Anomalous, non-conservative chemical transport in saturated porous media (*Gordon Research Conference, Lewiston, ME, USA, 11-16 July 2010*)

Characterization of Tropical Plumes that transport humidity from the Tropics to the eastern Mediterranean over Africa (*EGU conference, Vienna, Austria, April 2005*)

Invited seminars

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

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

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*)

Participation in organizing conferences and service

- | | |
|--------------|---|
| 2021-present | Department of Earth and Planetary Sciences representative to the Faculty of Chemistry Board of Studies, Weizmann Institute of Science |
| 2021 | Lead organizer of the conference “Mediterranean Cyclones: Dynamics, Impact and Prediction at Weather and Climate Scales”, Weizmann Institute of Science, 12 September 2021 |
| 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 th HyMeX Workshop, Lecce, Italy, 30 May 2018 |

2007 Member of the organizing committee and session chair, the 6th Conference on Active Research by Environmental Science Students (CARESS), Weizmann Institute of Science, 29 May 2007

SCIENTIFIC PRODUCTIVITY

Research grants

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

- Vered Silverman, 2018-present
- Deepika Rai, 2018-present
- Leehi Magaritz-Ronen, 2019-present

PhD theses

- Yonatan Givon, 2019-present

MSc theses

- Noy Klaider, 2021-present
- Tsruya Yaari, 2021-present

Visiting students (rotation or short-time stays)

Completed

Post-doctoral fellows

- Eyal Ilotovitz, 2021, WIS

MSc theses

- Stav Nahum, 2021, WIS: “Dry Intrusions Initiation: Large scale governing features and forcing mechanisms”; main supervisor.
- 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”; main supervisor.
- Lea Beusch, 2015, ETH Zurich. “Puelche Foehn - A Case Study”; co-supervisor with Lukas Papritz and Michael Sprenger.
- Yasmin Roszkopf, 2014, ETH Zurich. “A case study of a heavy precipitation event in southwestern Mediterranean, September / October 1986”; main supervisor.

Visiting students (rotation)

- Shahr Hegyi, 2018, Weizmann Institute of Science. “The global relationship between dry intrusions and boundary layer height anomalies”.
- Tsuf Lichtman, 2018, Weizmann Institute of Science. “The contribution of dry intrusions to ocean evaporation hot spots”.
- Eli Windwer, 2019, Weizmann Institute of Science. “The dynamical links between cyclone Dagmar and its clustered cyclones”.
- Oz Mendelsohn, 2020, Weizmann Institute of Science. “Machine-learning based classification of radiosonde profiles and their regional signature”.
- Noy Klaider, 2020, Weizmann Institute of Science. “Association between dry intrusions outflow and extreme cold events”.
- Tsruya Yaari, 2021, Weizmann Institute of Science. “Defining the outflow of extratropical dry intrusions that reach the tropic”.

Visiting scientists

- Dr. Sigalit Berkovic (IIBR), 2020, Weizmann Institute of Science, mini-sabbatical

Collaborators

2013-present Emmanouil Flaounas, National Observatory of Athens, Greece

2015-present Jennifer Catto, University of Exeter, UK

2019-present Virendra Ghate, Argonne National Lab, US

2019-present Philippe Drobinski, École Polytechnique, CNRS, Paris, France

LANGUAGES

Hebrew: Reading 3, Writing 3, Speaking 3

English: Reading 3, Writing 3, Speaking 3