

## Berkay Dönmez

Istanbul - Turkey

[donmezb16@itu.edu.tr](mailto:donmezb16@itu.edu.tr)

[berkaydonmezs.github.io/](https://berkaydonmezs.github.io/)

*Curriculum Vitae*

Istanbul Technical University  
Meteorological Engineering BSc.  
Atmospheric Sciences MSc.



### EDUCATION

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#### Atmospheric Sciences, MSc Degree | 2021 – June 2023

Istanbul Technical University, Turkey | GPA: 3.94/4

#### Meteorological Engineering, BSc Degree | 2016-2021

Istanbul Technical University, Turkey | GPA: 3.24/4 *Thesis*: The impact of urban land use on the springtime frontal and summertime convective precipitation events in Ankara

### FIELD EXPERIENCE

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#### Project Engineer | 2021 – 2022

##### [Cirrus CE](#)

- Implemented statistical techniques (e.g., PCA) to evaluate climate-related risks for the historical and projected periods utilizing the CMIP6 climate model simulations and several observational datasets.
- Prepared engaging climate data visualizations to communicate climate-induced hazard risks.

#### Data Science Intern | 2021 – 2022

##### [Tarentum AI](#)

- Created dashboards for exploratory analyses of meteorological variables.
- Applied various statistical methods to test the accuracy of the wind energy forecasts using SCADA.

#### Volunteer Junior Project Researcher | 2021

UNDP, Turkey

- Helped the team with the data analysis and visualization of regional climate model simulations as a junior research volunteer in UNDP's (United Nations Development Programme) *Enhancing Adaptation Action in Turkey Project*.

#### Undergraduate Intern | Summer 2020

##### [Alkazar Technology](#)

- Elaborated on the implementation of machine learning techniques in predicting severe weather.
- Performed literature research about validating and calibrating numerical weather model outputs.

#### Undergraduate Intern | Summer 2019

General Directorate of State Hydraulic Works (DSI), Antalya, Turkey

- Performed calculations for flood risk and the distribution of precipitation over drainage basins.

### PUBLICATIONS

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**Donmez, B.**, Donmez, K., Ustun, H.D.-U., Unal, Y., 2022. Urbanization-induced changes in convective and frontal precipitation events in Ankara. *Urban Clim.* 46, 101316 <https://doi.org/10.1016/j.uclim.2022.101316>.

Donmez, K., **Donmez, B.**, Ustun, H.D.-U., Unal, Y., 2022. Boundary-dependent urban impacts on timing, pattern, and magnitude of heavy rainfall in Istanbul. *Atmos. Res.* 106681 <https://doi.org/10.1016/j.atmosres.2023.106681>.

### CONFERENCE PRESENTATIONS

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**Donmez, B.**, Donmez, K., Yuruk Sonuc, C., and Unal, Y.: Present and projected humid heat exposure and precipitation extremes in Turkey, EGU General Assembly 2023, Vienna, Austria, 24–28 Apr 2023, EGU23-12059, <https://doi.org/10.5194/egusphere-egu23-12059>, 2023.

Donmez, K., **Donmez, B.**, Sonuc, C.Y., Unal, Y., 2022. Evaluating the Urban Impact on Temperature Records of Istanbul and Ankara: How Individual Metropolises May Differ in Their Response to Urbanization? 10<sup>th</sup> International Symposium on Atmospheric Sciences, Istanbul, Turkey. [Presentation Clip](#)

**Dönmez, B.**, Dönmez, K., Deniz, D-Ü., Ünal, Y., 2021. The Impact of Urban Land Use on the Springtime Frontal Precipitation Event in Ankara: A Case Study of 5 May 2014, EGU General Assembly 2021, online, 19–30 Apr 2021, EGU21-3056, <https://doi.org/10.5194/egusphere-egu21-3056>.

Dönmez, K., **Dönmez, B.**, Deniz, D-Ü., Ünal, Y., 2021. Assessment of Urbanization Impact on Heavy Precipitation in Istanbul, Turkey, EGU General Assembly 2021, online, 19–30 Apr 2021, EGU21-3057, <https://doi.org/10.5194/egusphere-egu21-3057>.

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## TECHNICAL SKILLS

**Programming:** Python, Linux, Fortran, Bash, ArcGIS, HTML/CSS

**Data:** Reanalysis and Forecast (ERA5, GFS, CFSR, NAM), Climate Projections (CMIP5 and CMIP6), Radar, Satellite (IMERG, TRMM, MODIS, Sentinel)

**Data Formats:** netCDF, HDF, GRIB, TIF, CSV, TXT, XLSX

**Packages:** Xarray, Scikit-learn, Numpy, Pandas, Wrf-python, Metpy, Salem, Matplotlib, Plotly, Dash

**Atmospheric Modeling:** WRF, COSMO, OpenIFS

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## PERSONAL PROJECTS / PORTFOLIO

**Climaturk** | [Website](#)

- Climaturk provides easy access to the storm archive of Turkey, presenting engaging synoptic, thermodynamic, and statistical analyses for the up-to-date meteorological and climatological state of Turkey.

**Geospatial Analysis Notebooks** | [Education](#)

- Publication of Jupyter notebooks, which dive into how to process geospatial data (e.g., GFS, GEFS, CMIP6 simulations) and apply specific statistical techniques on them.

**Visjobs** | [Python library](#)

- Visjobs is a Python package for accessing and visualizing atmospheric data effectively.

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## RESEARCH INTERESTS

Atmospheric Modeling, Implementation and Interpretation of Probabilistic Forecasting Techniques, Statistics in Atmospheric Science, Urban Meteorology, Atmospheric Dynamics, Climate Change, Extreme Heat

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## AWARDS and CERTIFICATES

**Most Innovative Paper Award** - International Global Climate Change Congress (IGCCC), 2021

[Credential](#) – [Presentation Clip](#)

- *Investigating and Comparing the Urban Signature on Heavy Precipitation in Istanbul and Ankara*

**Training Course** - ECMWF, 2022

[Credential](#)

- *A hands-on introduction to Numerical Weather Prediction Models: Understanding and Experimenting*

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## IN-FACULTY EXPERIENCE

**Data Analysis Team Leader** | 2019 – 2021

ITU High Altitude Balloon Team (ITUHAB) – Istanbul Technical University

- Worked with a team consisting of meteorological engineering students to conceptualize and

implement the creation and data-retrieving mechanism of a high-altitude balloon.

## **LANGUAGES**

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**English | IELTS** | Overall: 7.5 (C1), Listening: 8, Reading: 8, Speaking:7, Writing: 7