



Daniel Topal

sea-ice
greenland ocean melting
climate risks atmosphere
uncertainty ice learning modelling
future management change
projections
machine

CONTACT ME

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EDUCATION

PhD in Environmental Physics

2019 - 2023

Eotvos Lorand University

M.Sc in Meteorology

2014 - 2019

Eotvos Lorand University

SKILLS

- UNIX
- Fortran/Python/R
- NEMO4
- CESM
- climate modeling

SCIENTOMETRICS

h-index: 6

Independent (total) citations: 110 (160)

Cumulative impact-factor: 143.5

D1/Q1 journal papers: 12

WORK EXPERIENCE

Junior Research Fellow 2019 - present
Research Centre for Astronomy and Earth Sciences, Hungarian Research Network

Postdoctoral fellow 2023 - present
Université catholique de Louvain

Affiliated researcher 2018 - present
University of California Santa Barbara

Visiting Junior Researcher 2022
Central European University

PROJECTS AS PI

Bilateral Science & Technology grant no. 2019-2.1.11-TÉT-2020-00114

Co-operative Doctoral Student Fellowship [2020 - 2022]

New National Excellence Programme [2019 - 2023]

SELECTED GRANTS & AWARDS

Junior Prima Award Nominee of the Hungarian Republic

Visegrad Group Academies Young Researcher Award [2023]

Fulbright Visiting Student Researcher [2021 - 2022]

Sólyom-ösztöndíj [2018]

4x New National Excellence Program scholarship

2x Nation's Young Talent Scholarship

REVIEWER ACTIVITY

Nature Communications, Scientific Reports, Geophysical Research Letters

Journal of Climate, Nature Reviews Earth and Environment

LINKS

[Google Scholar](#) [ResearchGate](#)

PUBLICATIONS

- 14.* Hanna, E., **Topál, D.** et al. Short- and long-term variability of the Antarctic and Greenland ice sheets, *Nature Reviews Earth and Environment*, accepted (2023)
13. Demény, A., Czuppon, G., Kern, Z., Hatvani, I., **Topál, D.**, et al. A speleothem record of seasonality and moisture transport around the 8.2 ka event in Central Europe (Vacska Cave, Hungary). *Quaternary Research*, 1-16, (2023)
- 12.* Feng, X., Q. Ding, L. Wu, C. Jones, H. Wang, M. Bushuk, and **D. Topál**, Comprehensive representation of tropical-extratropical teleconnections obstructed by tropical Pacific convection biases in CMIP6. *J. Climate*, **36**, 7041–7059 (2023)
- 11.* **Topál, D.** & Ding, Q. Atmospheric circulation-constrained model sensitivity recalibrates Arctic climate projections. *Nat Clim Chang*, **13** 710–718 (2023).
- 10.* **Topál, D.** et al. Discrepancies between observations and climate models of large- scale wind-driven Greenland melt influence sea-level rise projections. *Nat Commun* **13** 6833 (2022).
- 9.* **Topál, D.** et al. An internal atmospheric process determining summertime Arctic sea ice melting in the next three decades: lessons learned from five large ensembles and multiple CMIP5 climate simulations. *J Clim* **33** (2020).
8. **Topál, D.** et al. Refining projected multidecadal hydroclimate uncertainty in East- Central Europe using CMIP5 and single-model large ensemble simulations. *Theor Appl Clim* **142** 1147-1167 (2020)
7. Sun, X., Ding, Q., Wang, SY.S. **Topál, D.** et al. Enhanced jet stream waviness induced by suppressed tropical Pacific convection during boreal summer. *Nat Commun* **13** 1288 (2022).
6. Ballinger, TJ et al. Abrupt Northern Baffin Bay Autumn Warming and Sea-Ice Loss Since the Turn of the Twenty-First Century. *Geophys Res Lett* **49** e2022GL101472 (2022)
5. Haszpra, T., **Topál, D.** & Herein, M. On the time evolution of the Arctic oscillation and related wintertime phenomena under different forcing scenarios in an ensemble approach. *J Clim* **33**, 3107–3124 (2020).
4. Demény et al. Holocene hydrological changes in Europe and the role of the North Atlantic ocean circulation. *Quaternary International*, **571** (2021)
3. Baxter et al. How Tropical Pacific Surface Cooling Contributed to Accelerated Sea Ice Melt. *J Clim* **32** (2019)
2. Hatvani, I.G., **Topál, D.**, Kern, Z., Ruggieri, E. Concurrent Changepoints in Greenland Ice Core $\delta^{18}\text{O}$ records and the North Atlantic Oscillation over the Past Millennium. *Atmosphere* **13** (2022)
1. **Topál** et al. Detecting breakpoints in artificially modified and real-life time series. *Open Geosciences* **8** (2016)