



*Klimarealistene*  
Michelets vei 8 B  
1366 Lysaker  
Norway  
ISSN: 2703-9072

Correspondence:

laszloszarka54@  
gmail.com

Vol. 4.3(2024)

pp. 145–150

## Historical and Recent Publications in Hungary on Climate Change

*Csaba László Szarka*

*Energy Working Group of the Batthyány Society of Professors, Czech Republic*

**Keywords:** Climate change; publication overview, Hungary, HungaroMet

Submitted 2024-11-25, Accepted 2024-11-29. <https://doi.org/10.53234/scc202412/33>

### 1. Summary of presentation

Gratefully acknowledging the initiative of the Czech CLINTEL Working Group, I decided to present a collection of Hungarian and Hungary-related results that explicitly or implicitly address any of the five topics of the conference “Climate change, facts and myths in the light of science”. Long-term quantitative data series (from meteorological, geophysical, heliophysical observatories) have a special importance, as well as some palaeoclimate proxy series and documents, and precisely observed extreme weather and other natural events. Either historical or recent papers may contain evidence supporting or refuting old or new hypotheses.

Geophysical Observatory Reports (<https://gor.epss.hu/>) and the Debrecen Solar Database of the Institute of Earth Physics and Space Science (<http://fenyi.solarobs.epss.hun-ren.hu/en/databases/Summary/>) together with observatory-based research papers since the 1950-es should be mentioned at first. Publicly available meteorological data series, owned presently by the HungaroMet (<https://www.met.hu>), the former Hungarian Meteorological Survey, have, unfortunately, been homogenized. The Hungarian Academy of Sciences still refuses to engage in discussions. Regular lectures, open discussion and debates on climate and energy issues have been organized in Hungary only by the Energy Working Group of the Batthyány Society of Professors (<https://pbk.info.hu/energetika-es-klimapolitika/>), in our series “How much? What is how much?”. MCC Brussels (MCC: Mathias Corvinus Collegium) organized an important climate conference in Brussels, on May 23, 2024 (<https://brussels.mcc.hu/event/climate-change-beyond-the-consensus>).

A continuously completed list of substantive climate papers from Hungary will be available at the website <https://www.klimatudomany.hu/publikaciok/>. In this lecture, several examples will be presented (Szűcs et al 2021, Fodor et al. 1880, Csernai et al. 2017, Szarka et al. 2023, Fraunhoffer et al. 1928 etc.).

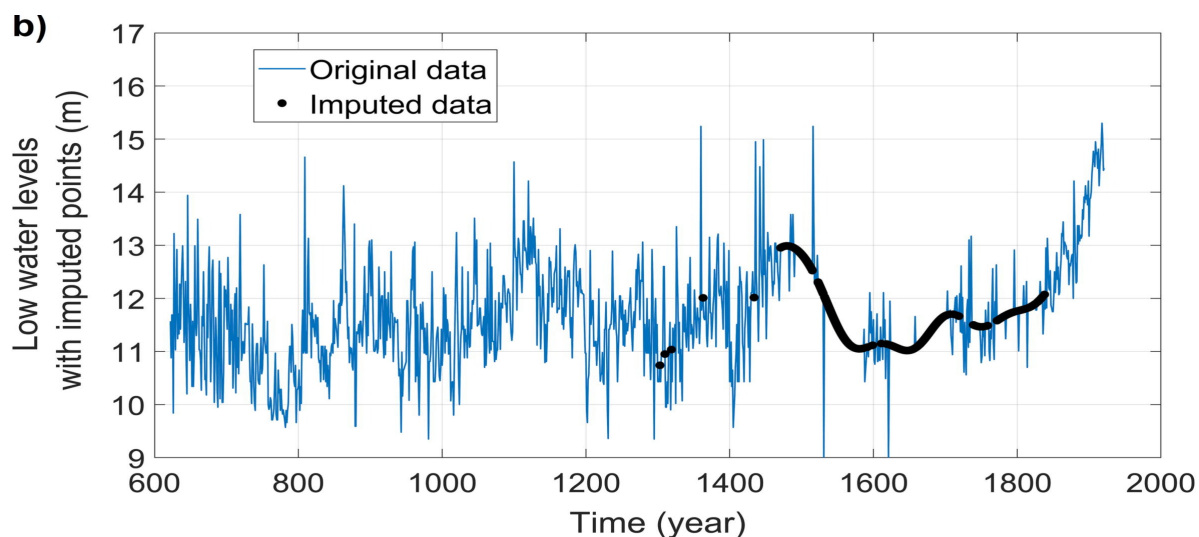


Figure 1. Annual minimum water level data of river Nile, 600–1921. Figure 1b from Szűcs et al. (2024)

Among historical observations, an extension (Szűcs et al. 2024) of an already known water level series of the river Nile will be presented, see Figure 1. The precipitation variation in the catchment area of the river Nile is a primary climate indicator. A 1300 years long time series, measured purposefully, in which the shorter time period published by Koutsoyiannis (2013, Hydr Sci J), is completed with further measured data and a correct mathematical procedure, provides a much more real image about the real world than any model is able to provide.

## 2. A list of substantial papers from Hungary on climate, far from to be complete

### 2.1 Climate change in geology

Kern, Zoltán – Árvai, Mátyás – Kázmér, Miklós (2024): The Budapest Tree-Ring Laboratory– Status report after 20 years of activity. *Central European Geology*, 6, 17

Kiss, Andrea (2021): Contemporary sources for reconstructing weather and floods: medieval Hungary and the Carpathian Basin. *Historical Climatology*, 8, 12, 10, [historicalclimatology.com](http://historicalclimatology.com)

Kriván, Pál (1955) : La division climatologique du Pléistocène en Europe Centrale et le profil de loess de Paks. *Annals of the Hungarian Geological Institute*, 43, 3, 441–510

Püspöki, Zoltán et al. (2021): Fluvial magnetic susceptibility as a proxy for long-term variations of mountain permafrost development in the Alp-Carpathian region. *Boreas*. 50, 3, 806–825.

Rónai, András (1973): Report on the main results of the working committee on near-surface cyclical phenomena. *MTA X. Osztályának Közleményei*, 6, 1–4, 7–11 (in Hungarian)

Sümegei, Pál – Gulyás, Sándor (2021): Some notes on the interpretation and reliability of malacological proxies in paleotemperature reconstructions from loess—comments to Obrecht et al.'s “A critical reevaluation of paleoclimate proxy records from loess in the Carpathian Basin”. *Earth-Science Reviews*, 221, 103675

Újváry, Gábor et al. (2024): Absolute  $^{230}\text{Th}/\text{U}$  chronologies and  $\Delta 47$  thermometry paleoclimate reconstruction from soil carbonates in Central Asian loess over the past 1 million years, *Geochimica et Cosmochimica Acta*, ISSN 0016-7037,

<https://doi.org/10.1016/j.gca.2024.09.008>

## 2.2 Climate change in history

- Berkes, Zoltán (1942): Spiegelung der Klimaschwankungen indem Längenwachstum der Weinreben-Triebein Kőszeg. Hungarian Royal Institute of Meteorology and Geomagnetism, Budapest
- Fraunhoffer, Lajos (1928): Über die heurige grosse Hitze. *Időjárás*, 32, 9–10, 173–174
- Kósa, László (2008): *Natural disasters and their civilization consequences in the 19<sup>th</sup> century in Hungary*. Inauguration talk at the Hungarian Academy of Sciences, ISSN 1419-8959. MTA, 2014 (in Hungarian)
- Matyasovszky, I., Ljungqvist, F.C. Abrupt temperature changes during the last 1,500 years. *Theor Appl Climatol* 112, 215–225 <https://doi.org/10.1007/s00704-012-0725-8>
- Paládi-Kovács Attila (2011): *Natural environment of the Hungarian nation*. Budapest, MTA Ethnography Institute
- Réthy, Antal – Berkes, Zoltán (1963): *Nordlichtbeobachtungen in Ungarn 1513–1960*, Budapest
- Réthy, Antal (1963): *Weather events and natural disasters in Hungary until 1701*, Budapest (in Hungarian)
- Réthy, Antal (1970): *Weather events and natural disasters in Hungary 1701–1800* (in Hungarian)
- Réthy, Antal (1999): *Weather events and natural disasters in Hungary 1801–1900*, Vol 1–2. Budapest (in Hungarian)
- Střeščík, Jaroslav – Verő, József (2000): Reconstruction of the spring temperatures in the 18th century based on the measured lengths of grapevine sprouts, *Időjárás*, 2000, 104, 123–136.
- Szűcs, Péter – Dobróka, Mihály – Turai, Endre – Szarka, László – Ilyés, Csaba – Hamdy, E. M. – Szabó, Norbert P. (2024). Combined inversion and statistical workflow for advanced temporal analysis of the Nile River’s long term water level records. *Journal of Hydrology*, 630, 130693. <https://doi.org/10.1016/j.jhydrol.2024.130693>

## 2.3 Physical processes

- Ádám, Antal et al. (2010): Geoelectromagnetism and the changing Earth. *Acta Geodaetica et Geophysica Hungarica*, 44, 3, 2, 270–312.
- Ádám, Antal et al. (2005): Earth electromagnetism. *Acta Geodaetica et Geophysica Hungarica*, 317–348.
- Baranyi, Tünde et al. (2013). Varying solar activity. *Magyar Geofizika*, 53, 3, 171–175. (in Hungarian)
- Bencze, Pál (2009): Geographical distribution of long-term changes in the height of the maximum electron density of the F region: A nonmigrating tidal effect?, *J. Geophys. Res.*, 114, A06304, doi: 10.1029/2008JA013492.
- Berényi, Dénes (2011): Climate change, global warming, CO2 effect. *Magyar Tudomány*, 172, 1, *Science of Climate Change* <https://scienceofclimatechange.org>

18–31. (in Hungarian)

- Berkes, Zoltán (1957): New results in the investigation of the relationship between solar activity and general atmospheric conditions. *Időjárás*, 61, 208. (in Hungarian)
- Berkes, Zoltán (1965): Analysis of secular distribution of the precipitation. *Időjárás*, 69, 3–4, 226–230. (in Hungarian)
- Berkes, Zoltán (1970): Cosmic effects in the lower atmosphere. *MTA Föld- és Bányászati Tudományok Osztályának Közleményei*, 1–3, 131–156. (in Hungarian)
- Bór, József – Bozóki, Tamás – Sántori, Gabriella et al. (2023): Responses of the AC/DC global electric circuit to volcanic electrical activity in the Hunga Tonga-Hunga Ha’apai eruption on 15 January 2022. *Journal of Geophysical Research: Atmospheres*, 128, e2022JD038238
- Császár, Géza – Haas, János – Nádor, Annamária (2010): Climatic Changes in the History of the Earth. *Magyar Tudomány*, 169, 6 663–687.
- Cseh Sándor – Bencze, Pál (2005): Long-term variations of temperature, wind, and precipitable water in the troposphere and lower stratosphere over Budapest, Hungary. *Időjárás*, 109, 189–202.
- Csernai, László P et al. (2017): Quantitative assessment of increasing complexity. *Physica A*, 473, 363
- Csernai, László P et al. (2016): Physical basis of sustainable development. *Int. J. of Central European Green Innovation*, 42, 39–50
- Horváth, Zsolt – Rácz, Zoltán (2005): *Klimaváltozások: adatok, nagyságrendek, modellek.* [https://www.met.hu/doc/rendezvenyek/metnapok-2005/03\\_Horvath.pdf](https://www.met.hu/doc/rendezvenyek/metnapok-2005/03_Horvath.pdf) (in Hungarian)
- Illés-Almár, Erzsébet (2004): Weather reacting to geomagnetic storms. *Advances in Space Research*, 34, 376–378.
- Jánosi, Imre (2019): *Globális klímaváltozás: Mit tanultunk az elmúlt 14 évben?* [https://atomcsill.elte.hu/NEW/wp-content/uploads/2021/03/atomcsill\\_15\\_01\\_Janosi\\_Imre.pdf](https://atomcsill.elte.hu/NEW/wp-content/uploads/2021/03/atomcsill_15_01_Janosi_Imre.pdf)
- Kiss, Annamária – Földváry, Lóránt (2017): Uncertainty of GRACE-borne long periodic and secular ice mass variations in Antarctica. *Acta Geodaetica et Geophysica*, 52, 4, 497–510.
- Koppán, András – Szarka, László – Wetztergom, Viktor (2000): Annual fluctuation in amplitudes of daily variations of electrical signals measured in the trunk of a standing tree. *C. R. Acad. Sci., III*, 323, 6, 559–563.
- Kovács, István J et al. (2021): The ‘pargasosphere’ hypothesis: Looking at global plate tectonics from a new perspective, *Global and Planetary Change*, 204, 103547, <https://doi.org/10.1016/j.gloplacha.2021.103547>
- Milankovitch, Milutin (1920) : *Théorie mathématique des phénomènes thermiques produits par la radiation solaire.* Gauthiers-Villars, Paris. In German: *Mathematische Theorie der durch Sonnenstrahlung Wärmephänomene*, Bulletin des travaux de l’Académie des Sciences de Zagreb.
- Miskolczi, Ferenc (2007): Greenhouse effect in semi-transparent planetary atmospheres. *Időjárás*, 111, 1–40.
- Miskolczi, Ferenc (2023): Greenhouse Gas Theories and Observed Radiative Properties of the Earth’s Atmosphere. *Science of Climate Change*, 3, 3, 232–289.
- Péczei, György (1957): The relationship between pressure changes in the polar region and cosmic factors. *Időjárás* 61, 6, 452–453. (in Hungarian)

- Rácz Zoltán (2013): Climate changes and the critics of the activist mind [http://archive.galile-owebroadcast.hu/20130213\\_Budapesti\\_Szkeptikus\\_Konferencia\\_2013/20130213\\_Budapesti\\_Szkeptikus\\_Konf\\_05\\_Racz.html](http://archive.galile-owebroadcast.hu/20130213_Budapesti_Szkeptikus_Konferencia_2013/20130213_Budapesti_Szkeptikus_Konf_05_Racz.html), <https://docplayer.hu/111409599-Klimavaltotasok-es-az-aktivista-esz-kritikaja-racz-zoltan.html> (removed from the ELTA website; in Hungarian)
- Reményi K (2010): Consensus and evidence are not scientific arguments. *Magyar Tudomány*, 171, 44–8. (in Hungarian)
- Szarka, László (2024): On the potential forcings of the global warming. *Magyar Tudomány*, 185, 2, 244–259 (in Hungarian)
- Szarka, László – Soon, Willie – Cionco, Rodolfo G (2021): How the astronomical aspects of climate science were settled? On the Milankovitch and Bacsák anniversaries, with lessons for today. *Advances in Space Research*, 67, 1, 700–707.
- Szarka, László (2021): Climate science and Earth physics. *Magyar Geofizika*, 62, 1, 7–26 (in Hungarian)
- Vincze, Miklós et al. (2023): Extreme temperature fluctuations in laboratory models of the mid-latitude atmospheric circulation. *Sci. Rep*, 13, 20904,
- Williams, Earl – Bozóki, Tamás – Sători, Gabriella et al. (2020): Evolution of global lightning in the transition from cold to warm phase preceding two super El Niño events. *JGR Atmospheres*, 126, 3, e2020JD033526.
- Márcz, Ferenc – Sători, Gabriella – Zieger, Bertalan (1997): Variations in Schumann resonances and their relation to atmospheric electric parameters. *Ann. Geophysicae*, 15, 1604–1614.
- Márcz Ferenc – Harrison R Giles (2003): Long-term changes in atmospheric electrical parameters observed at Nagycenk (Hungary) and the UK observatories at Eskdalemuir and Kew. *Ann. Geophysicae*, 21, 2193–2200.
- Márcz Ferenc – Harrison R Giles (2005): Further signatures of long-term changes in atmospheric electrical parameters observed in Europe. *Ann. Geophysicae*, 23, 1987–1995

#### 2.4 Humanity's influence on climate change

- Szarka, László et al. (2023): How much? What is how much? A Study from the Energy Working Group of the Batthyány Society of Professors, [pbk.info.hu/archiv/pbk-forum/PBK\\_Study\\_English\\_Mzey.pdf](http://pbk.info.hu/archiv/pbk-forum/PBK_Study_English_Mzey.pdf)

#### 2.5 Greenhouse gases and water

- Barcza, Szabolcs (2016): Greenhouse effect from the point of view of radiative transfer. *Acta. Geod. Geophys.* 52 (2017), 581–592. <https://doi.org/10.1007/s40328-016-0187-z>
- Fodor, József, Joseph (1882): *Hygienische Untersuchungen über Luft, Boden und Wasser : insbesondere auf ihre Beziehungen zu den epidemischen Krankheiten*, Braunschweig: Friedrich Vieweg
- Huszár, Csaba (2024): *What makes the atmosphere warm?* Manuscript
- Garbai, László (2024): *CO<sub>2</sub> lifetime calculations*, Manuscript (in Hungarian)
- Möcsény, Mihály (2008): *CO<sub>2</sub> – H<sub>2</sub>O – Landscape*. Manuscript, <https://www.bitesz.hu/co2-h2o-Science-of-Climate-Change> <https://scienceofclimatechange.org>

[taj/](#) (in Hungarian)

Ónodi, Tibor (2003): Doubts about the degree of the greenhouse effect. *Bányászati és Kohászati Lapok, Kőolaj és Földgáz*, 36 (136), 10, 119–128 (in Hungarian)

## *2.6 Influential talks in Hungary on climate change and climate policy*

Courtillot, Vincent (2014): *Dangerous global warming: myth or reality? On scientific discovery, consensus and debate: a personal experience*. Lecture at the Hungarian Academy of Sciences, Budapest, October 29, 2014

Crok, Marcel (2024): *The frozen views of the IPCC*. Lecture at the Batthyány Society of Professors (PBK), Budapest, October 21, 2024

Soon, Willie (2024): *Problems in Sun-Climate Connection Studies*. Lecture at the Institute of Earth Physics and Space Science (EPSS), Sopron, 13 June, 2024

Vinós, Javier (2024): *A new climate change mechanism explains the solar effect on climate*. Lecture at PBK, Budapest, June 17, 2024, and lecture at EPPS, Sopron, June 19, 2024

Furfari, Samuel (2024): *Energy insecurity: The organised destruction of the EU's competitiveness*. Lecture to be presented on the common event of the Battyány Lajos Foundation and the Batthyány Society of Professors, Budapest, November 28, 2024

**Guest-Editor:** Stein Storlie Bergsmark