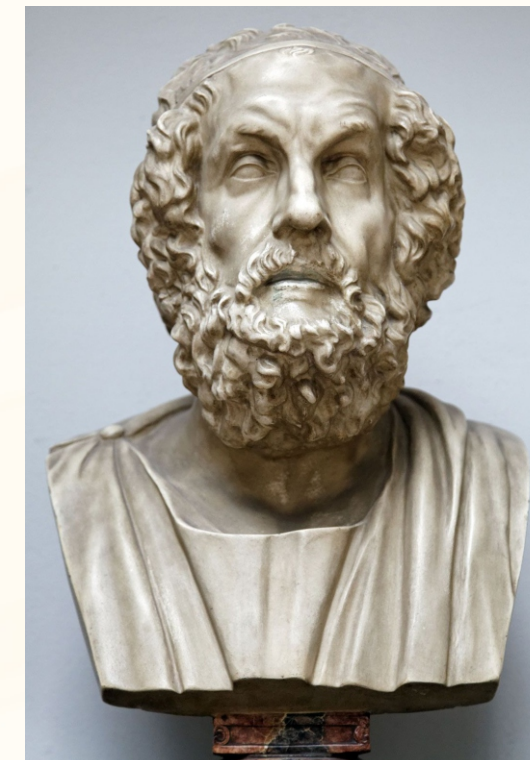


EPOS-PL: research infrastructure, achievements, and prospects

Marek Lewandowski - EPOS National Node (lemar@igf.edu.pl)
and EPOS PL Consortium members
Institute of Geophysics, Polish Academy of Sciences, Warsaw

EPOS - what does it mean 2775 years after Homer?



Homer
the Father of Epos

- EPOS is the biggest European infrastructural programme in solid Earth sciences.
- The mission of EPOS is to build and integrate research infrastructures in Europe.
- The goal of EPOS is to organize an open exchange of scientific and monitoring data for joint analysis and interpretation within the framework of European scientific cooperation, with a special focus on seismology, volcanology, geomagnetism, geodesy, and, in general, on dynamics of the European plate
- The challenges for EPOS are the establishment of stable European linkages among measurement nodes and databases, horizontal cooperation within EPOS, staff development, and funds raising.

EPOS-PL Challenges

- EPOS-PL - the Polish component of the European EPOS project
- Integration of databases and their consolidation, as well as creation of new database networks for the development of geosystem research
- Effective sharing of data and research results with governmental entities.
- Dissemination of knowledge for better understanding of natural phenomena.
- Expanding the composition of the EPOS-PL Consortium to include new institutions for technical development, and better management of useful raw materials for reducing the risk of their exploitation.

EPOS-PL financial resources 2020-2024

EPOS-PL

EPOS-PL: IG PAS, Cyfronet, GIG, IGIK, UPWr, WAT; 70 702 329 zł.
EPOS-PL+ : GIG-PIB, IG PAS, Cyfronet, UPWr, ING PAS, CBK PAN; 46 666 745 zł.
TCS AH: IG PAS, Cyfronet, GIG; budżet: 4 075 642 zł.
TCS AH: IG PAS, CYFRONET, GIG, UPWr, IGS PAS: 15 936 382 zł (2024-2028)
Total: 137 381 098 zł

Other EC projects for EPOS-PL consortium members

EPOS-SP: 355 875 Euro
S4CE: 172 750 Euro
DT-GEO: 558 625 Euro
Geo-INQUIRE: 472 520 Euro
EPOS ERIC TCS AH MYCA: 427 800 Euro
Total: 1 987 570 €

EPOS-PL achievements 2020-2024

Bibliometric data

- research articles based on the EPOS-PL database, published in JCR journals = 97
- positively concluded PhD dissertations based on the EPOS-PL database = 14

Purchased scientific instruments, computers and software = 23 574 436 zł

Societal values

- increasing safety in the exploitation of natural resources
- reinforcing the national, independent, reference satellite geodetic network and spatial reference systems
- strengthening the role of Polish natural sciences research in the sensitive areas of geosystem research, as to environmental transformation, climate change, and precision in description of the Earth and its near space
- public access to the real observational data

EPOS-PL infrastructure hosting entities:

Academic Computer Centre Cyfronet AGH (**CYFRONET**)
Central Mining Institute-National Research Institute (**GIG-PIB**)
Institute of Geodesy and Cartography (**IGiK**)
Institute of Geological Sciences, PAS (**ING PAS**)
Institute of Geophysics, PAS (**IG PAS**, consortium leader)
Military Technical Academy (**WAT**)
Space Research Center, PAS (**CBK PAS**)
Wrocław University of Environmental and Life Sciences (**UPWr**)

EPOS-PL Research Infrastructure Centers

- CBK PAS+UPWr: satellite data repository
- CBK PAS: atomic time calibration and distribution
- CYFRONET: main access point to TCS AH data, computing and programming support, maintenance of the database services.
- GIG-PIB: seismic episodes data repository for the Upper Silesian mining area (in cooperation with other centers)
- IG PAS+IGS PAS: analytical laboratories in Warsaw (rock magnetism) and Cracow (geochronology, geochemistry)
- IG PAS: geomagnetic and magnetotelluric data repository
- IG PAS: induced seismicity, anthropogenic hazard (TCS AH)
- IG PAS: lithospheric seismic data repository
- IGIK: gravimetric data repository
- WAT+UPWr: GNSS data repository

EPOS-PL: a new edition from 2025 onward

- solid Earth geophysics: from the crust down to the Earth's core
- geohazard induced by the anthropogenic and natural seismicity (early warning systems, raw material mining, landslides, methane emissions, glaciers dynamics), Digital Twins-GEO
- GNSS and satellite imaging in the Earth and environmental sciences
- multiscale laboratories: from radiogenic elements and magnetic domains to environmental change and geotectonics data science in geophysics: big data acquisition, storage and mining
- development of autonomic and automatic geophysical instruments for remote areas

ACKNOWLEDGMENTS

Beata Plesiewicz is acknowledged for technical help in preparation of this poster