

❖ **Scientific conferences:**

Conference name place & date	Organizer, co-organizers	Conference type	
		national	international
Conference on the occasion of World Water Day and Glacier Day Warsaw, 21 <sup>st</sup> March 2025	IG PAS Committee on Water Sciences and Water Management, PAS	x	
Open lecture "What's in the air over Racibórz?" Racibórz, 30 <sup>th</sup> May 2025	IG PAS	x	
XLII International School of Hydraulics Radocza, 20 <sup>th</sup> -23 <sup>rd</sup> May 2025	IG PAS		x

**Conference on the occasion of World Water Day and Glacier Day, Warsaw, 21<sup>st</sup> March 2025 (85 participants)**

The conference was organized as part of the celebration of World Water Day and the first World Glacier Day. A key highlight of the program was the presentation of the latest UNESCO report, "Mountains and Glaciers: Water Towers," which was officially published that day. The report emphasizes the importance of mountains and glaciers as critical global water resources and the need to protect them in an era of ongoing climate change. The expert part of the conference included 3 presentations (Dr. Oskar Głowacki, IG PAS; Dr. Mateusz Grygoruk, SGGW; Dr. Bartłomiej Luks, IG PAS). The presentations were followed by a panel discussion on the challenges facing science and society in the face of melting glaciers and changing water resources. The event culminated with a screening of the documentary "When the Ice Disappears," directed by Kuba Witek.

**XLII International School of Hydraulics (20<sup>th</sup>-23<sup>rd</sup> May 2025, Radocza)** brought together 75 participants from various countries, representing scientific community, public administration, and companies operating in the water management sector. The School of Hydraulics is a recurring conference, organized since 1981, devoted to issues of hydrodynamics and environmental hydraulics. It brings together experts from science and industry, including early-career researchers, fostering an atmosphere conducive to scientific discourse, knowledge exchange, collaboration, and learning.

The conference program included numerous thematic sessions, poster presentations, and plenary lectures. A key highlight was a special session dedicated to the flood that affected Europe in 2024. In addition to several presentations on this topic, a panel discussion entitled "Flood 2024 in Europe – Lessons Learned: Understanding, Responding, and Preparing for the Future" was held. The session addressed the causes and impacts of the event, the lessons learned, and strategies for preventing similar disasters in the future.

As part of the conference program, participants also had the opportunity to visit the Porąbka Żar pumped-storage power plant, which is normally not open to the public.

**Open lecture "What's in the air over Racibórz?" (Racibórz, 30<sup>th</sup> May 2025)**

The lecture, organized by IG PAS, held in the historic interiors of the District Court in Racibórz, provided a unique opportunity to learn about the activities of the Racibórz Observatory of IG PAS and the ACTRIS-PL project - a European research infrastructure focused on atmospheric monitoring. The event was public in nature and addressed both the residents of Racibórz and employees of IG PAS.

The lecture program comprised 5 presentations. Dr. Agata Goździk introduced the audience to the mission, structure, and main areas of activity of IG PAS, emphasizing the importance of science communication and cooperation with local communities. Jan Kalabiński presented the nearly 100-year history of the Racibórz Observatory, its role in the development of seismology, and the unique features of its location that are conducive to scientific research. Wojciech Wojtak discussed seismological measurements conducted at the Observatory and presented records of selected earthquakes registered by IG PAS seismological network. Dr. hab. Aleksander Pietruczuk outlined the objectives, operational framework, and structure of the European ACTRIS consortium and the Polish ACTRIS-PL consortium, within which a measurement station located at the Racibórz Observatory operates, highlighting their role in atmospheric aerosol monitoring. Dr. Artur Szkop addressed types of air pollutants, forms of smog, and the impact of air pollution on human health. He also presented methods for assessing air quality and discussed the importance of the results for environmental policy.

### ❖ **Initiatives promoting and popularizing scientific research results:**

In 2025, educational and information booths as well as outreach activities were organized during various science-related events, including the Science Picnic, the Science Festival, the "Ocean of Changes" Festival in Sopot, school science picnics, and educational activities conducted in schools as part of the "GeoAkcja" project and the Institute's own program entitled "Geophysics at School" (PL: "Geofizyka w szkole"). Below is an overview of the individual activities carried out by IG PAS in 2025.

#### **Lectures, talks and workshops as part of the Geophysical Mobile University:**

1. 17<sup>th</sup> March 2025 – Lecture entitled "The Arctic as a litmus test of climate change", delivered during the Polar Day at Nicolaus Copernicus University in Toruń; speaker: Dr. Agata Goździk; audience: 866 participants
2. 13<sup>th</sup>-15<sup>th</sup> June 2025 – An outreach booth at the Science Base (approx. 3,000 visitors) and a popular science lecture entitled "Ultraviolet radiation – friend or enemy?" (80 participants), held during the Pyrkon Fantasy Festival in Poznań; contributors: Dr. Eng. Agnieszka Czerwińska, Dagmara Bożek, Dr. Agata Goździk, Dr. Tomasz Wawrzyniak, Piotr Terlecki, and Justyna Szymkowska
3. 15<sup>th</sup> September 2025 – Outreach booth at the Sopot Science Picnic "Ocean of Changes"; contributors: Dagmara Bożek and Dr. Agata Goździk; audience: 800 participants

#### **Festival meetings and lessons – Science Festival 2025:**

1. 22<sup>nd</sup> September 2025 – "What does a geophysicist do?" – meeting held on the occasion of the opening of a photography exhibition
2. 23<sup>rd</sup> September 2025 – "Mineral evolution – the nanimate Vversion of Darwinian transformations" – open lecture at IG PAS
3. 27<sup>th</sup> September 2025 – "Arctic beaches in the era of global warming" – open meeting as part of the Science Day at the University of Warsaw
4. 22<sup>nd</sup> September 2025 – "The Arctic as a litmus test of climate change" – online lesson for upper secondary schools
5. 23<sup>rd</sup> September 2025 – "Inhabitants of the Arctic and Antarctica" – online lesson for grades 4–6 of primary schools

6. 24<sup>th</sup> September 2025 – "Mysteries of water and light" – 3 lessons for grades 7–8 of primary school
7. 24<sup>th</sup> September 2025 – "On smog and other air pollutants and how we monitor them" – online lesson for upper secondary schools

**GEOPHYSICS AT SCHOOL classes for schools conducted by employees and PhD students of IG PAS (4 lessons for a total of 150 students):**

1. Monika Kalinowska, Filip Bojdecki, Adrian Bróz – 11<sup>th</sup> March 2025, Private Primary School No. 62 in Warsaw
2. Dhruv Maniktala – 27<sup>th</sup> March 2025, B. Prus 35<sup>th</sup> Upper Secondary School in Warsaw, 32 participants
3. Michał Brennek – 27<sup>th</sup> March 2025, B. Prus 35<sup>th</sup> Upper Secondary School in Warsaw, 52 participants
4. Tanmay Keluskar – 9<sup>th</sup> April 2025, S. Rowecki "Grot" 160<sup>th</sup> Upper Secondary School in Warsaw, 50 participants

IG PAS also conducted shows during the **28<sup>th</sup> Science Picnic** on 10<sup>th</sup> May 2025 at the booth of the GeoPlanet Earth and Planetary Research Centre, which brings together 5 institutes of the Polish Academy of Sciences. As the managing institution of the Centre, IG PAS also acted as the overall coordinator of the booth, which was staffed by approximately 50 people in total. The shows and activities prepared by IG PAS' staff included: identification of different rock types, gelation of biopolymers in the presence of salts and colouring of the resulting transparent gels, as well as a puzzle illustrating the cryosphere.

IG PAS also participated in the **science picnic "My City"**, organized by the Wola District on 6<sup>th</sup> September 2025 in Prince Janusz Park. Using VR headsets, visitors to the Institute's booth were able to travel to the Polish Polar Station Hornsund, look inside a glacier cave, walk across 2 glaciers, and explore the station's surroundings and technical facilities. Participants could also take part in the Polar Wheel of Fortune and test their knowledge of snow and ice. In addition, picnic participants had the opportunity to view themselves using a UV camera, determine their skin phototype, calculate safe exposure time outdoors, and learn how to choose appropriate sunscreen to avoid skin damage while ensuring an adequate dose of vitamin D3.

On 4<sup>th</sup> December 2025, the **screening of films devoted to polar regions** was organised at IG PAS. The event was the result of cooperation initiated by the Polish Polar Club and the Polish Polar Consortium, of which the Institute is a member, in collaboration with the Educational Film Studio in Łódź and the Silesian Film Archive. Unique archival polar-themed films were presented ("*To Torell Land*", 1934; "*Spitsbergen 1973*"; "*Arctowski Station*", 1978; "*Cold Land*", 1983), as well as a film directed by contemporary filmmakers ("*The Indistinct Clatter of Birds*", 2024). The event was attended by approximately 50 participants.

IG PAS conducted **6 publicly accessible popular-science webinars** as part of the project "*Geogadka – Promoting geophysics and Earth sciences*", reaching a total of **881 participants**.

1. 11<sup>th</sup> February 2025 – "Inspiring stories of women geophysicists"; speakers: Dr. Katarzyna Dudzisz, Dr. hab. Eng. Iwona Kuptel-Markiewicz, Anna Nadolna; 31 participants

2. 21<sup>st</sup> March 2025 – "Glaciers and water in the Arctic"; speaker: Anna Nadolna; 775 participants
3. 28<sup>th</sup> May 2025 – "Geophysical methods in cave research"; speaker: Dr. Jerzy Giżejowski; 4 participants
4. 20<sup>th</sup> August 2025 – "How challenging can the weather in Poland be?"; speaker: Michał Brennek; 9 participants
5. 24<sup>th</sup> September 2025 – "Weather models – AI vs. traditional forecasts. Where to find reliable weather information?"; speaker: Dr. Beata Latos; 45 participants
6. 8<sup>th</sup> October 2025 – "Should we be concerned about snow in the Arctic?"; speaker: Dr. Bartłomiej Luks; 17 participants.

The Institute also prepared **a series of podcasts entitled "Geogadka"**. The series was launched in 2022 and continued in subsequent years. In 2025, **11 podcasts** were released:

- **Podcast #17. *Santorini, the holy grail of seismology and AI – What do they have in common?***

In this episode of the popular-science *GEOGADKA* podcast, we talk with Prof. Dr. hab. Eng. Beata Orlecka-Sikora, seismologist and Head of the Department of Seismology at IG PAS, about earthquakes in Greece and research conducted by Institute's scientists.

- **Podcast #18. *USA vs. EU – A scientific financial domino effect?***

This episode focuses on the situation of scientists in the United States in the context of changes in government administration and the impact of selected political decisions on research conducted in European Union countries. The guests of Dagmara Bożek are Prof. Dr. hab. Paweł Rowiński, Director of IG PAS and President of the European Federation of Academies of Sciences (ALLEA), as well as IG PAS researchers: physicist Dr. Dariusz Baranowski and oceanographer Dr. hab. Oskar Głowacki.

- **Podcast #19. *Shaking places in the Solar System***

In this episode, we talk with Helena Ciechowska, a PhD student in the Department of Seismology at IG PAS, about earthquakes - but not necessarily on Earth.

- **Podcast #20. *A dry spring – trend or coincidence?***

This episode features a conversation with Dr. Emilia Karamuz, Assistant Professor in the Department of Hydrology and Hydrodynamics at IG PAS, on early spring droughts and their future consequences.

- **Podcast #21. *What do bogs, landslides, and permafrost have in common?***

The guest of this episode is Dr. Eng. Szymon Oryński from the Department of Magnetism at IG PAS, who discusses the applications of electromagnetic methods.

- **Podcast #22. *Meteorologist: Chemtrails? What are they?***

The guest is Michał Brennek from the Department of Atmospheric Physics at IG PAS.

- **Podcast #23. *What is hidden in road dust?***

The episode features Dr. Sylwia Dytłow from the Department of Magnetism at IG PAS, discussing the enigmatic nature of road dust and what it contains.

- **Podcast #24. *Is it worth it? PhD students of IG PAS on their studies***

To mark October and the beginning of the new academic year, this episode is devoted to doctoral studies. The guests are PhD students of IG PAS: Szczepan Bal (Department of Magnetism), Geetika Chauhan (Department of Hydrology and Hydrodynamics), and Justyna Szymkowska (Department of Atmospheric Physics).

- **Podcast #25. *What do cheesecake with raisins and billion-year-old rocks have in common?***

In this episode, we talk with Dr. Piotr Król, a geologist from the Department of Magnetism at IG PAS, about a fascination with geochemistry and the oldest rocks.

- **Podcast #26. *To fear or not to fear? Methane under the biogeochemist's lens***

Where does methane in the Arctic come from and what does it mean for climate change in this region? These questions are discussed with Dr. Maciej Bartosiewicz from the Department of Polar and Marine Research at IG PAS.

- **Podcast #27. *And then lightning struck... in the Arctic***

Are thunderstorms in the Arctic merely a coincidence? In a conversation with Dr. Daniel Kępski from the Department of Atmospheric Physics at IG PAS, we explore this intriguing atmospheric phenomenon in polar regions.

7 expert videos were produced (playlist):

<https://youtube.com/playlist?list=PLiWRn6uRXqilWwuFxfhyl-2b91vmzAxW5&si=GQJPzTbihhgKqRUW>

1. *"Forces in rotating systems – Surprising experiments"* – Dr. hab. Krzysztof Mizerski
2. *"Increased seismic activity on Santorini: What can we expect?"* – Dr. hab. Grzegorz Lizurek
3. *"Smog and its consequences"* – Dr. Artur Szkop
4. *"Surprising marine gels"* – Dr. hab. Magdalena Mrokowska
5. *"Arctic amplification"* – Dr. Tomasz Wawrzyniak, Dr. Bartłomiej Luks, Dr. Agata Goździk
6. *"Why do we study groundwater and the active layer in Spitsbergen?"* – Dr. Tomasz Wawrzyniak
7. *"Green hydrodynamics: How vegetation affects pollutant transport in rivers"* – Dr. hab. Eng. Monika Kalinowska, Dr. Emilia Karamuz, Filip Bojdecki

In addition, a series of short videos entitled **"GEOGADKA IN A MINUTE!"** (PL: "GEOGADKA W MINUTĘ") was produced:

1. *Why does the Earth shake?* – speaker: Dr. hab. Grzegorz Lizurek
2. *How can we look inside the Earth?* – speaker: Dr. Julia Rewers
3. *Why do we need theoreticians?* – speaker: Prof. Dr. hab. Wojciech Dębski
4. *Meteorology – Why does it require international cooperation?* – speaker: Dr. Dariusz Baranowski
5. *How can a deep-Earth plume split continents and build islands?* – speaker: PhD Das Ayanangshu

Link to the short-video series:

<https://www.youtube.com/shorts/19PA7fgYF-U>

IG PAS carried out a wide range of **activities addressed to primary and upper secondary schools** across Poland. As part of the *GeoAkcja* project, 15,234 participants were reached. The project included the following activities:

1. **30 online lessons** covering key topics in geophysics, climate change, environmental protection, and polar research. The lessons were attended by 8,684 students from 383 schools.
2. **21 classes and workshops** conducted by scientists at schools throughout Poland. These activities were enriched with multimedia materials, experiments, and elements of career guidance. A total of 1,412 students participated.
3. **44 student visits** to geophysical observatories (Świder, Belsk, and Racibórz) and to the headquarters of IG PAS in Warsaw. The participants (1,087 students in total) had the opportunity to see measurement equipment, learn about the realities of scientific work, and take part in interactive games and virtual tours using VR headsets and 360-degree films.
4. **9 workshops for teachers** held in several Polish cities. During 8 on-site workshops and one online meeting, 148 participants gained knowledge about contemporary polar and climate research, the realities of life and work at a polar station, and received a ready-to-use "*Polar Escape Room*" game set along with detailed instructions on how to apply it in school practice.

In addition, an innovative educational game entitled "*Polar Escape Room*" (traditional and online versions) was developed, introducing students to polar research, climate change, teamwork, and logical thinking. By the end of 2025, 1,337 participants had played the traditional version of the game, while 2,564 participants took part in the online version.

In 2025, IG PAS continued the **video mapping shows entitled "*Forces of the Earth*"**, prepared by the Institute as part of the project "*The Fascinating Earth*". The presentation showcases selected examples of natural disasters, including earthquakes, floods, droughts, hurricanes, and storms. The video mapping tells the story of scientists working at IG PAS who, in their daily research, investigate the causes of these phenomena and develop forecasts of their intensity in the short- and long-term perspective. The "*Forces of the Earth*" mapping was originally prepared in autumn 2023 for projection on the façade of the Jan III Sobieski Palace in Wilanów as part of the Royal Garden of Light. It was presented every Friday, Saturday, and Sunday during the winter season.

#### ❖ **Initiatives of a general environmental nature:**

##### **1. The exhibition "*Geophysicists at work*"**

**The exhibition "*Geophysicists at work*"** was presented on the fence of the Institute premises along Newelska Street. The exhibition consists of 9 panels, printed on a special outdoor material resistant to weather conditions. It showcases the work of scientists from IG PAS, ranging from field research and laboratory work to measurements conducted in polar and tropical environments. The exhibition is displayed on the fence of IG PAS along Newelska Street 6. Its official opening took place on 21<sup>st</sup> September 2025 as part of the 29<sup>th</sup> Science Festival, which enabled promotion of the exhibition through the Festival's communication channels and

significantly increased its audience reach. Following the opening, visitors were invited to attend scientific talks devoted to selected research topics pursued by scientists from the Departments of Hydrology and Hydrodynamics, Seismology, and Geophysical Imaging of IG PAS. During the event, guests also had the opportunity to meet and talk with the authors of the photographs and the speakers.