

Scientific Storytelling in Geodesy



IAG - International Association of Geodesy
<https://geodesy.science>

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EGU General Assembly 2026 | Monday, May 4 | Vienna, Austria





**When
did you last
use geodesy?**

GEODESY

Today.
Without realizing it.

navigation systems
(GNSS)

digital maps

coordinate systems

satellite orbit

gravity field

Earth rotation
timing

Corrections
Atmosphere, tides, ...

Navigation

Positioning



Geodesy in Everyday Life

**Urban Planning &
Infrastructure**

Keeping Time

Saving Lives
Disaster Management
& Risk Reduction

Reference Frames
for Earth system monitoring



learn more about geodesy
geodesy.science/about-geodesy



GEOODESY

**Our problem isn't relevance
it's visibility.**

GEODESY

SCIENCE of studying the Shape, Gravity Field and Rotation of the Earth

Learn More



<https://geodesy.science>

Geodesy in Everyday Life

Empowering Society and Shaping Our Future

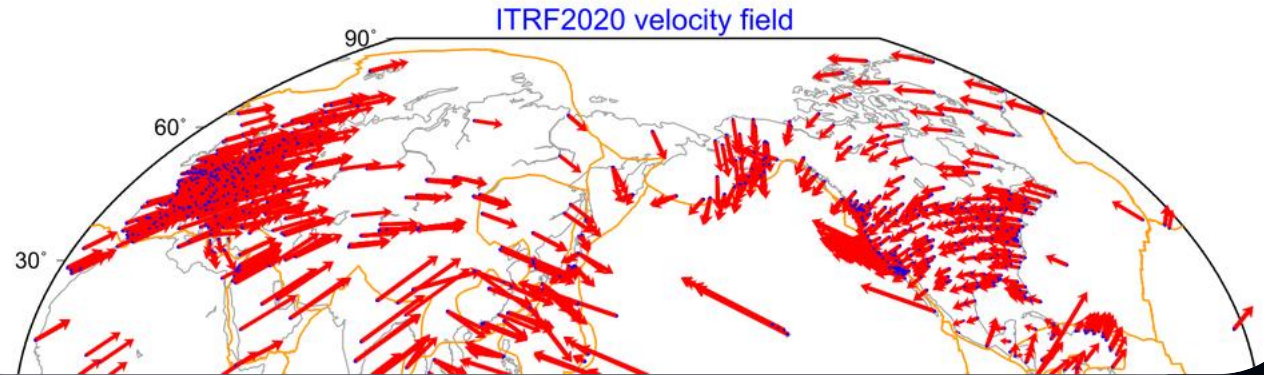


Station Positions and their Time Variations



Why do we need precise positioning and navigation on Earth and in space?

The precise knowledge of the **time varying positions of stations** at the Earth's surface is essential for quantifying changes in the Earth system as a basis for an improved understanding of the underlying geodynamic processes. These products are fundamental for many activities, ranging from disaster prevention and mitigation, the understanding of climate change to the building and management of a prosperous and sustainable global society. The **International Terrestrial Reference Frame (ITRF)** provides the global frame for estimating station positions and their time variations. As primary products, the ITRF comprises precise **3-dimensional station positions** (referred to a reference epoch) and constant **velocities** of the ITRF network stations **observed by space geodetic techniques**, such as Very Long Baseline Interferometry (VLBI), Satellite Laser Ranging (SLR), Global Navigation Satellite Systems (GNSS) and Doppler Orbitography and Radiopositioning Integrated by Satellite (DORIS) (Links). The ITRF computation makes use of the entire observation time series for each of the four observation techniques covering almost 40 years for VLBI and SLR, and more than 25 years for GNSS and DORIS.



Scientific Storytelling



Stories ...

- **Simplifies complexity**
- **Capture attention**
- **Makes information more memorable**

ideal for communicating complex science

Scientific Storytelling



Short Films

Geodesy Short Films

- **Explaining geodesy** (products, techniques)
- **Very basic level**
- **Translated up to 16 languages** (by community)
- **Very positive response** (used in education, ...)



2022

Film 1: Discover GGOS & Geodesy

- 27.000 views (all versions)

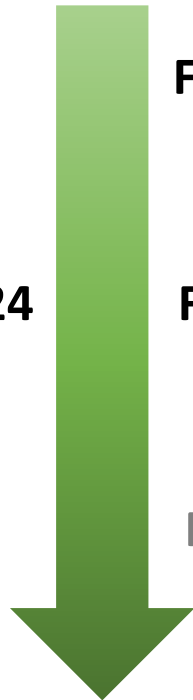
2023/24

Film 2: Terrestrial Reference Frames

- 57.000 views (all versions)

2026

Film 3: Gravity (in production)



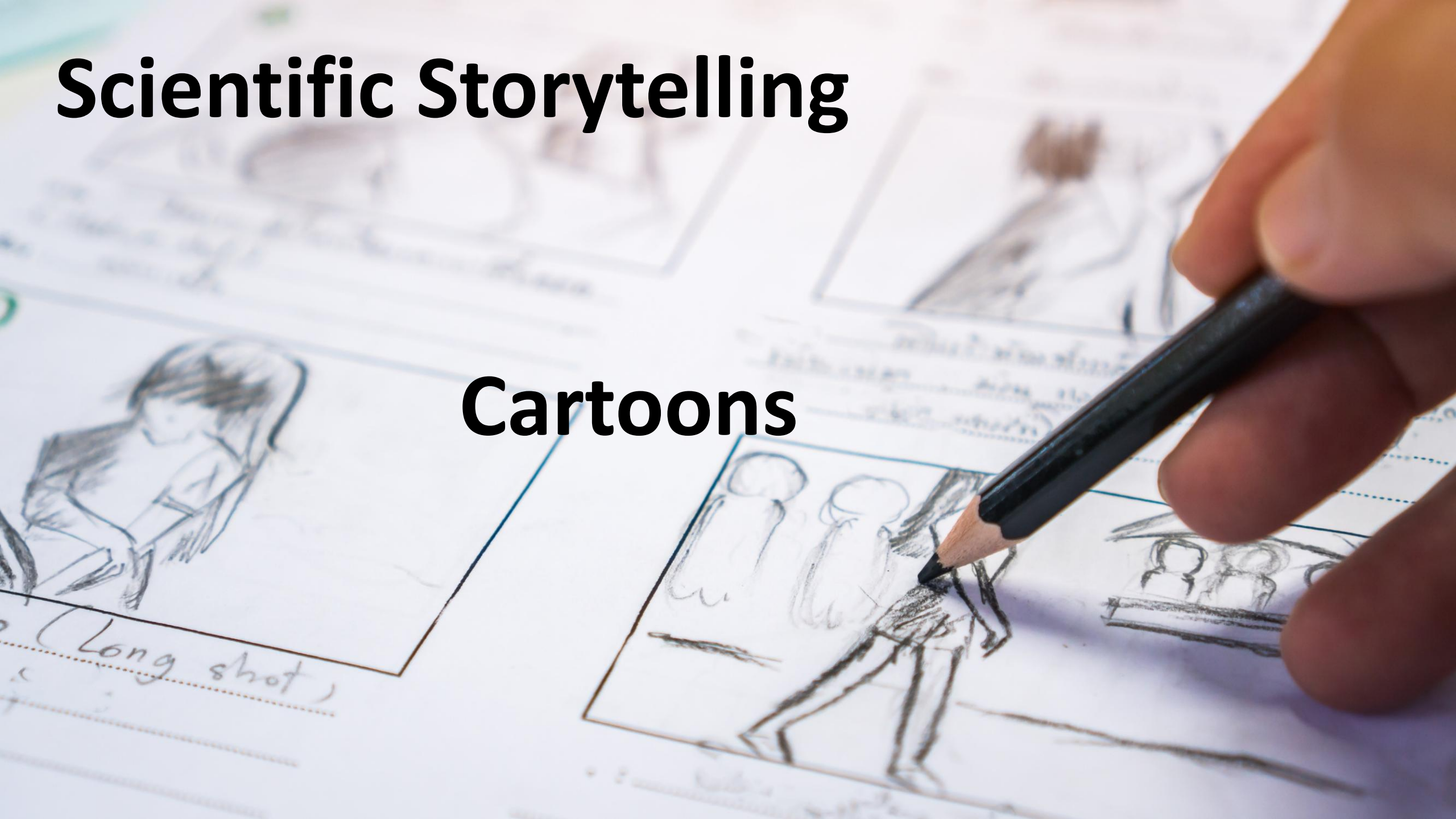
watch
here



youtube.com/@iag-ggos

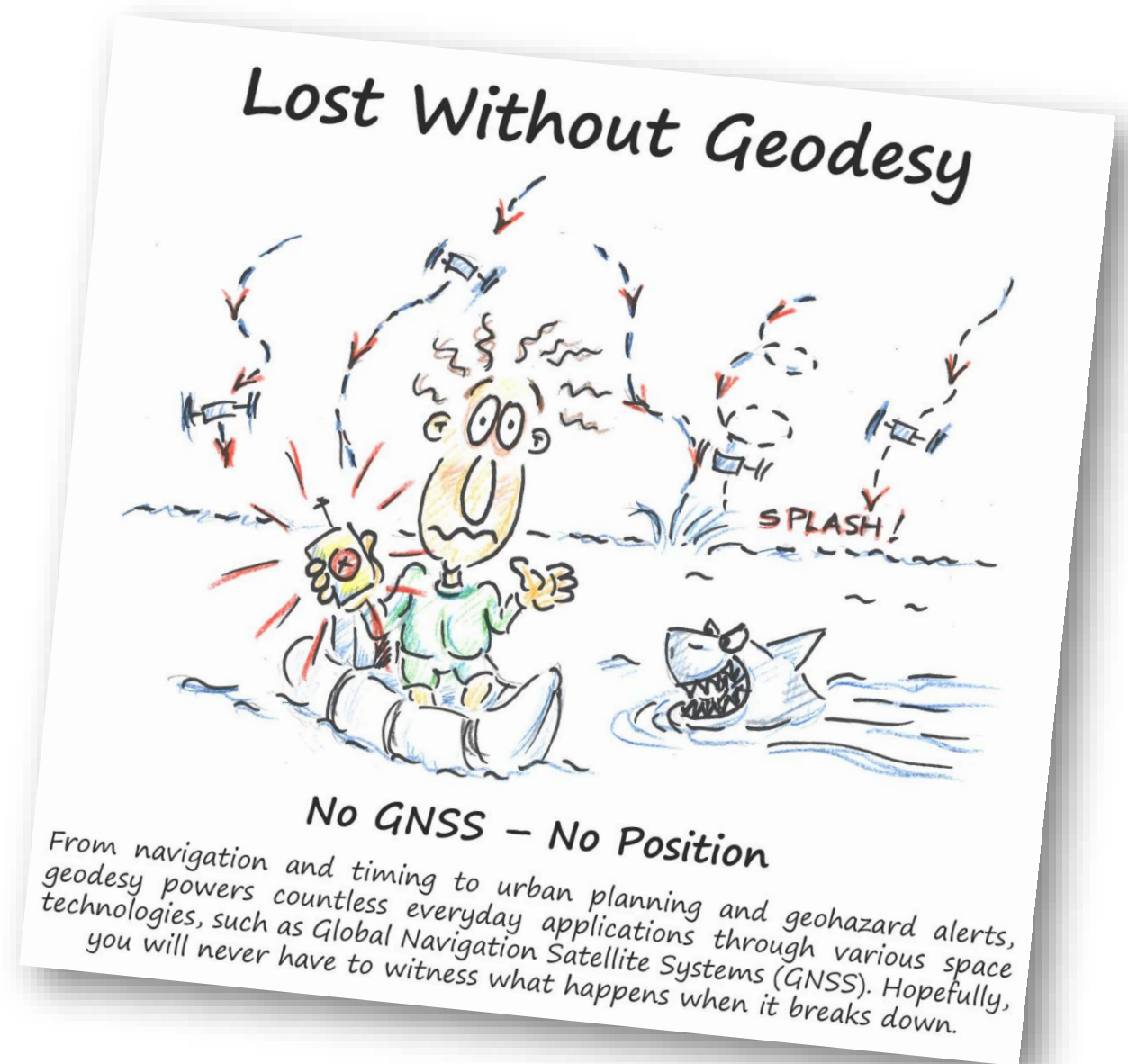
Scientific Storytelling

Cartoons



Geodesy Cartoons

- **New media** for scientific storytelling
- **Simplify** complex geodetic topics
- **Make Sciences Funny**
- **Reach wider audience**



geodesy
.science
/cartoon

Geodesy Cartoons

- Idea and first cartoons in 2024
- Illustrated by a geodesy professor

Riccardo Barzaghi
cartoonist



Before

The height was measured with respect to mean sea level observed at different locations.



Now

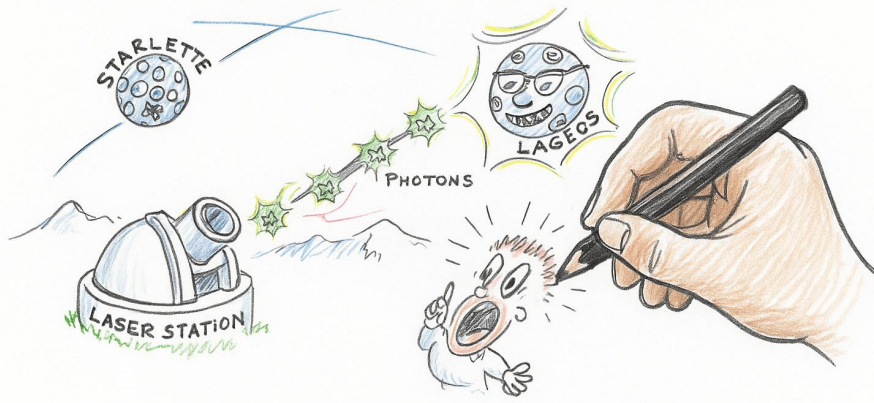
The new height refers to a global unified reference level (the geoid), based on the International Height Reference Frame (IHRF).



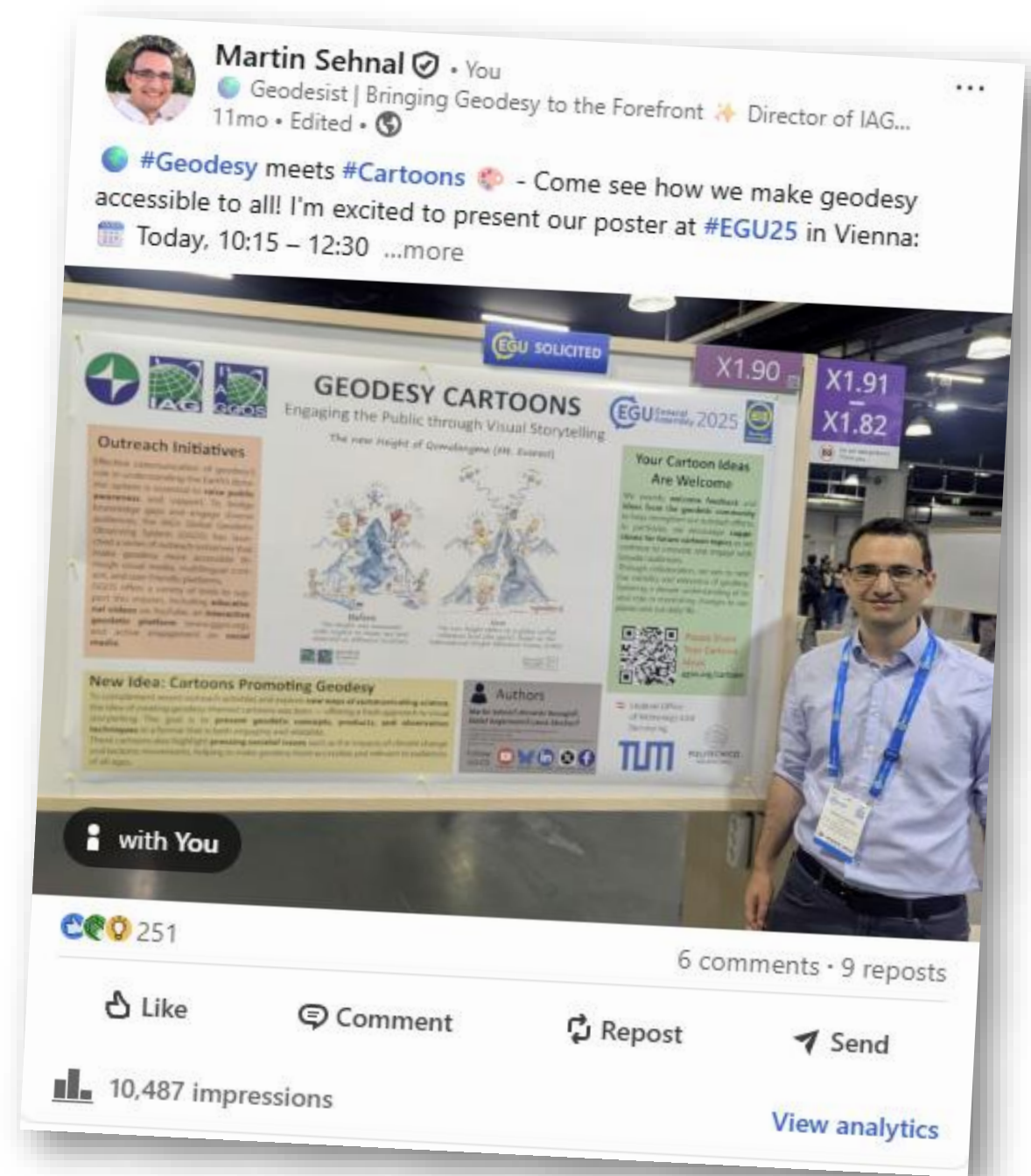
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Geodesy Cartoons

- Poster at EGU25
- Very positive response
- Idea to make a **Cartoon Competition**



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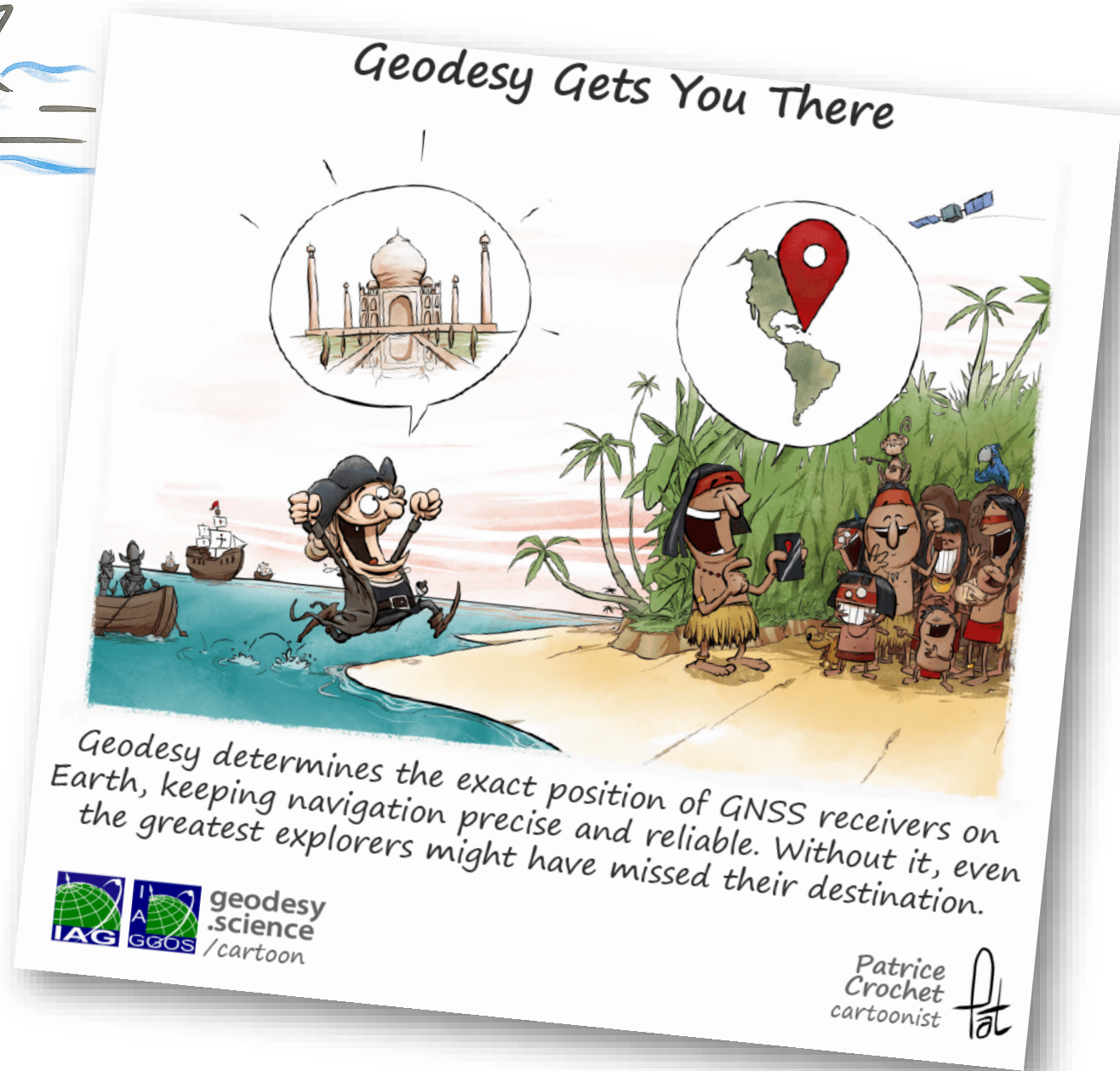
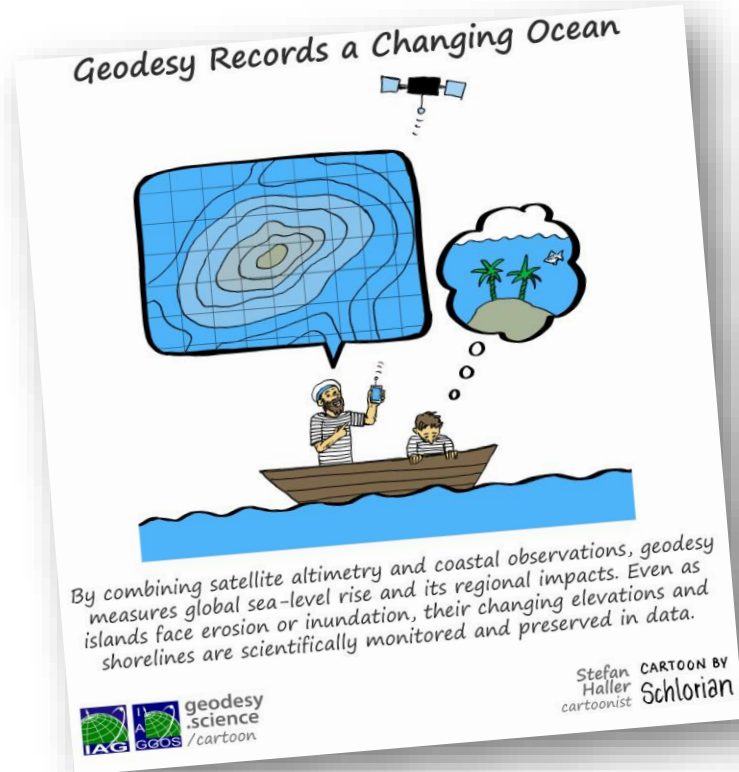
LinkedIn post of cartoon initiative by M. Sehnal during EGU25

GEODESY CARTOON COMPETITION



Goal:

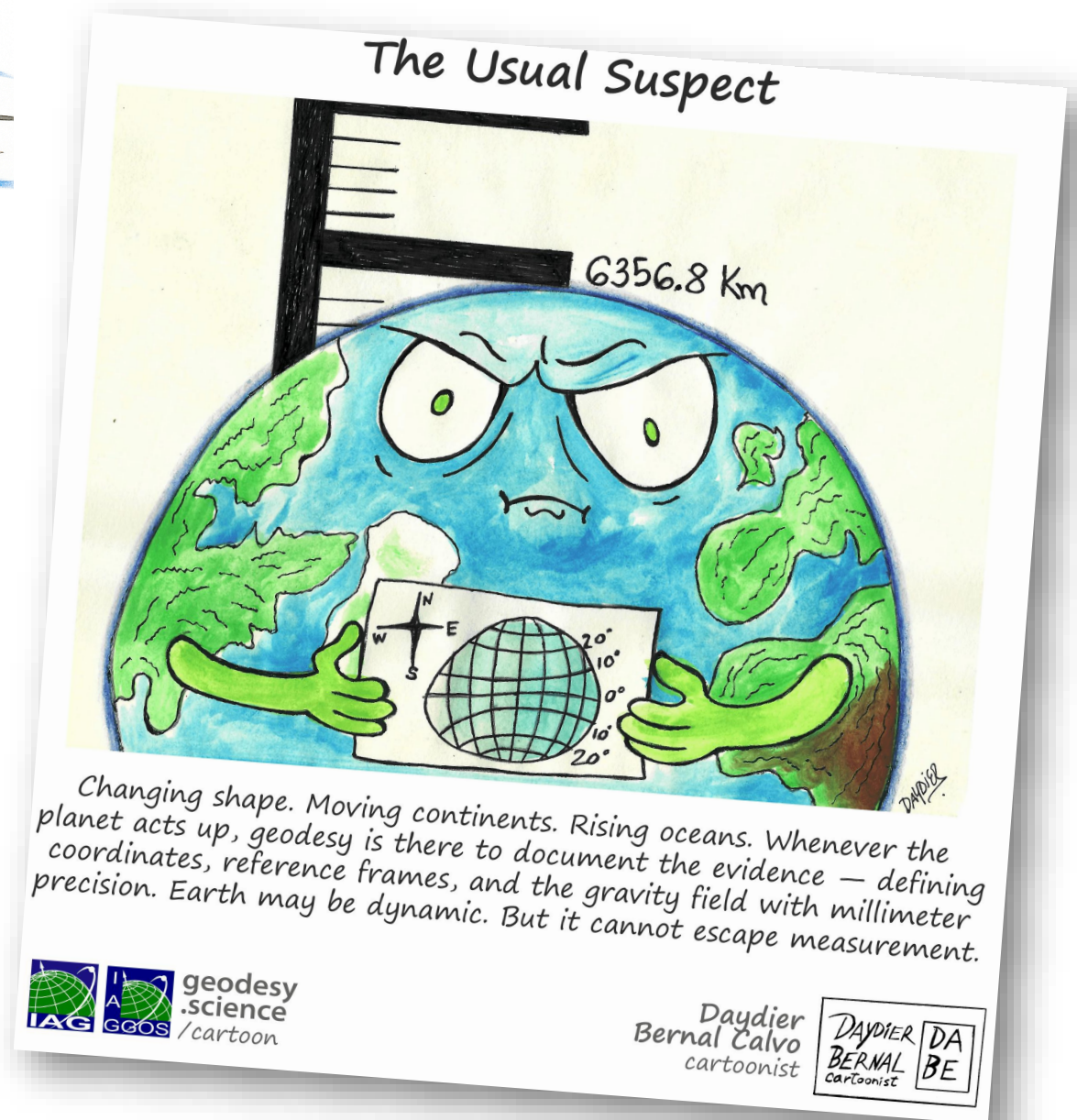
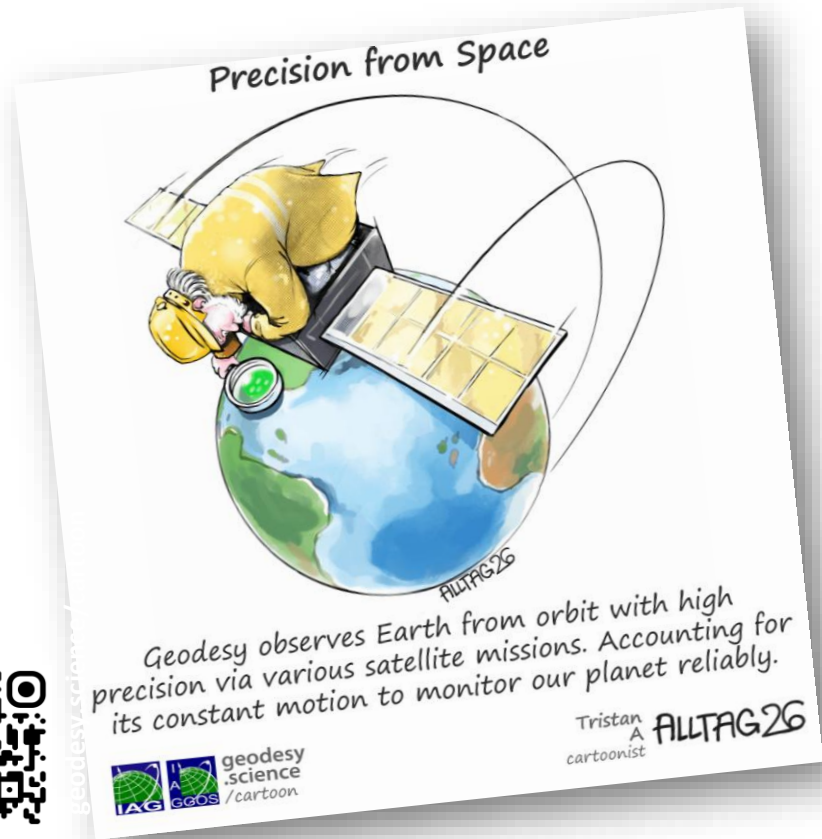
- Get cartoons for **promoting geodesy**
- **Free Use (CC BY)**
- **Encourage geodesy community (creative minds)**



GEODESY CARTOON COMPETITION



- **3 Categories:** General, Observations, Products
- **Several Prizes:** 1800 € (in total for all categories)

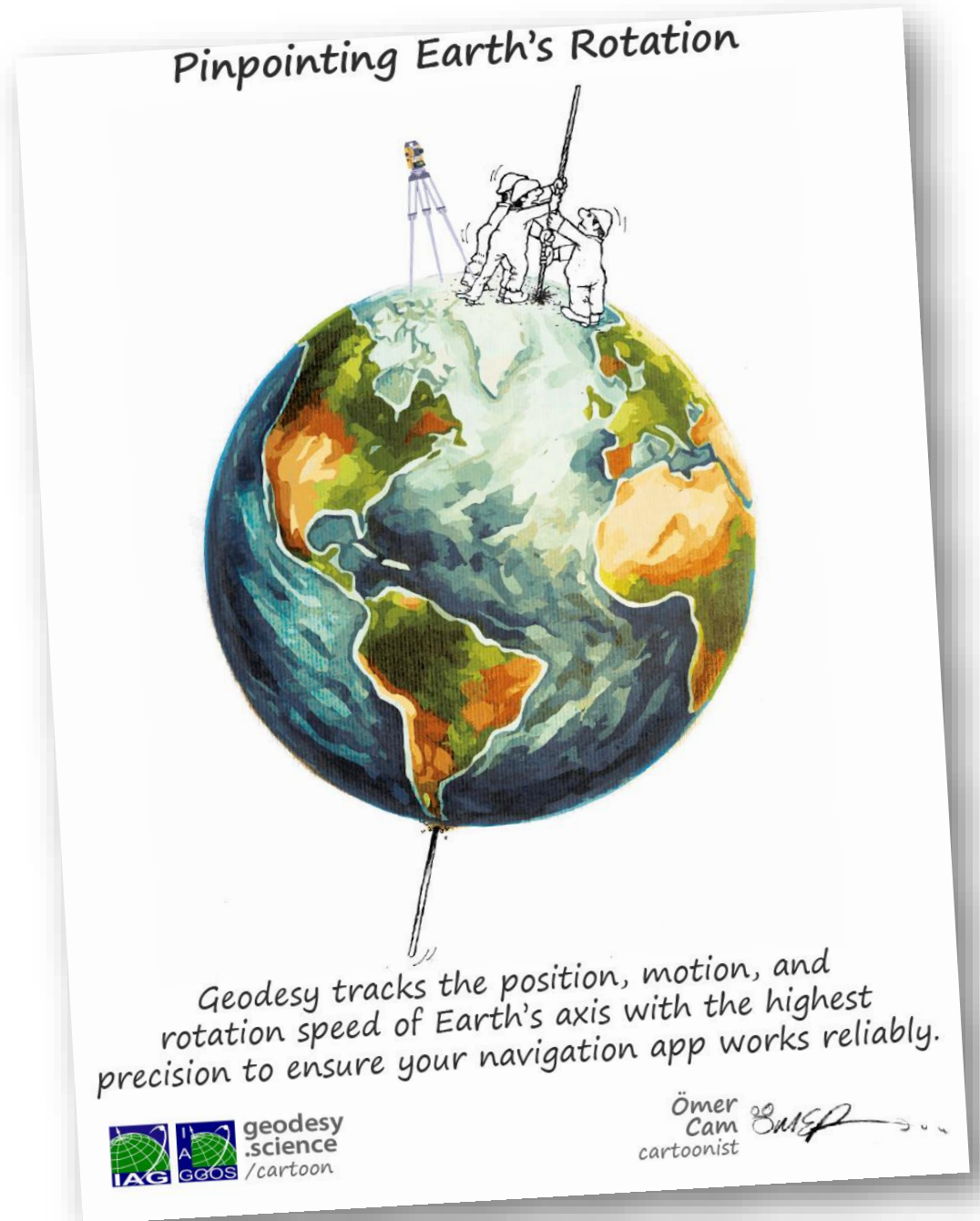
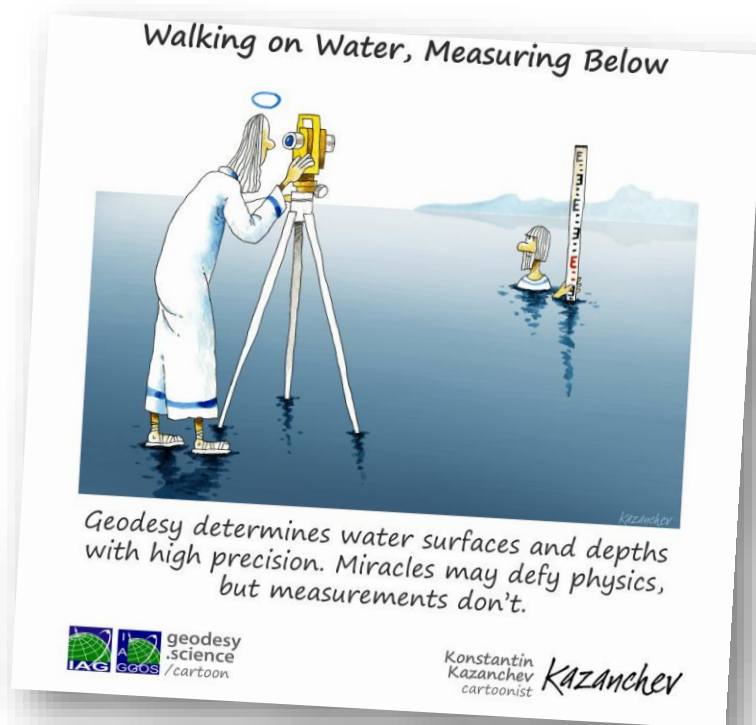


GEODESY CARTOON **COMPETITION**



Timeline:

- **Call Periode:** Sept. 2025 - March 2026
- **Voting:** April 2026
- **Winner Announcement:** Tomorrow (May 5)



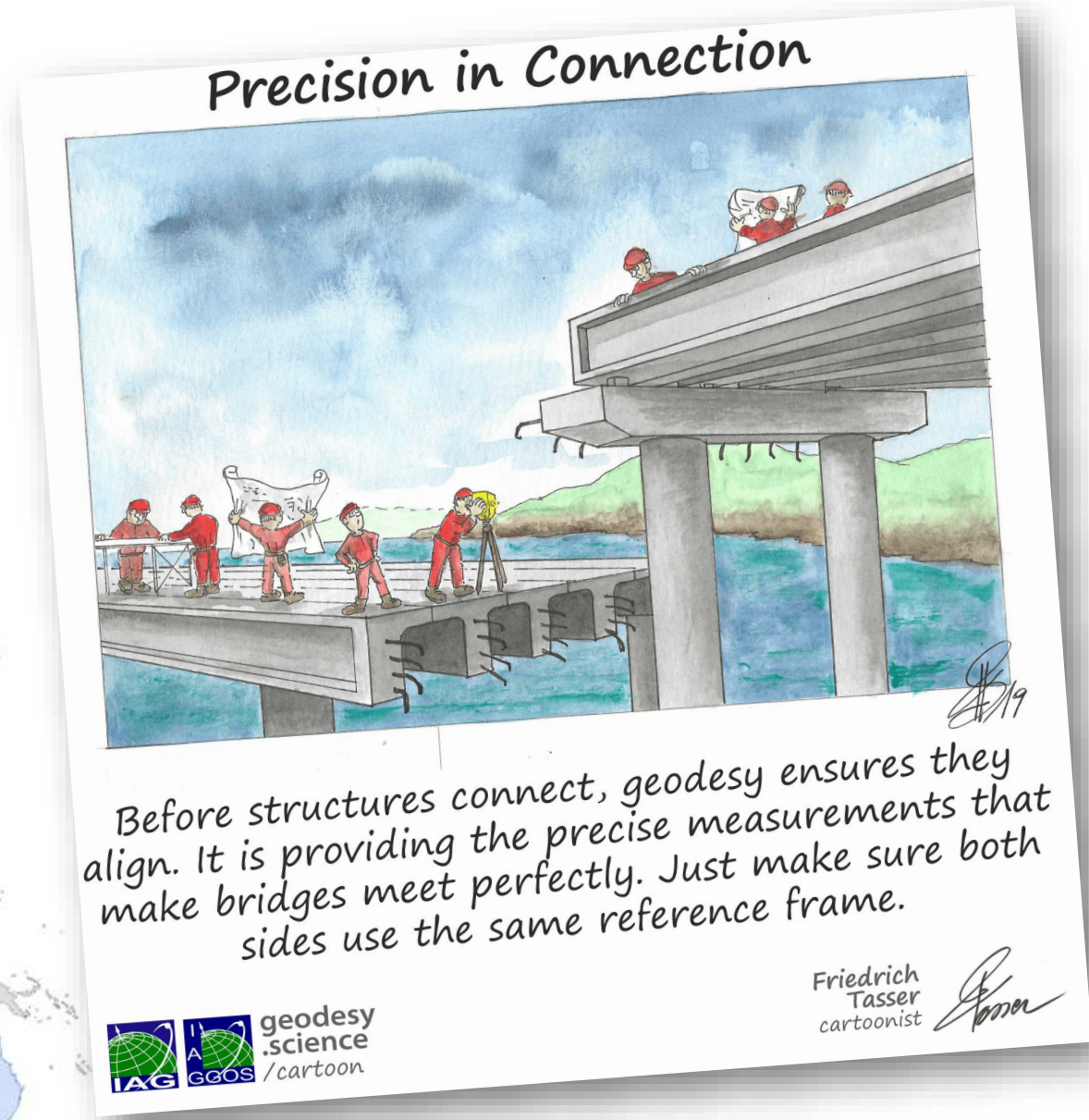
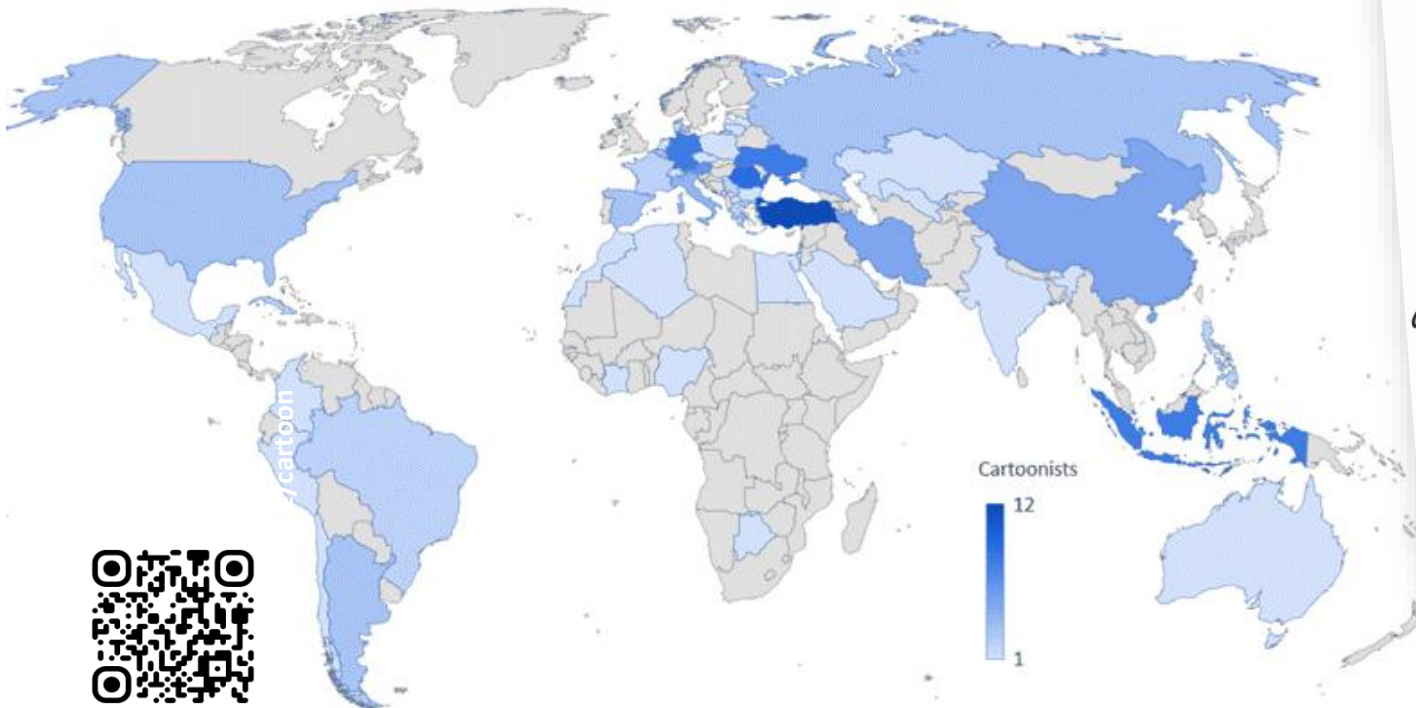
these cartoons shown here are competition submissions

GEODESY CARTOON **COMPETITION**



Results:

- **Submitted Cartoons:** 274
- **Cartoonists:** 119 (35 of it by ECS)
- **Countries:** 46



GEODESY CARTOON COMPETITION



Where Is the Sea?



Beach day! But the ocean seems to be running late. Whether the tide is high, low, or temporarily far away, geodetic tide gauges keep measuring. Their long-term records help scientists understand sea level change and the dynamics of the oceans.



Eda
Uzunoglu
cartoonist



The Geodetic Tailor



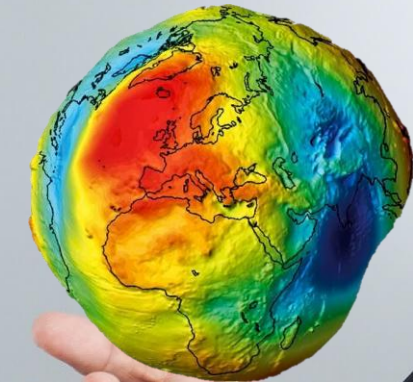
Geodesists stitch together observations of Earth's surface, gravity, rotation, and their changes to tailor the most precise model of our dynamic planet.



Eda
Uzunoglu
cartoonist



**Curious about
geodesy?**



**Geodesy 101:
A crash course
for non-geodesists**
Today 12:45–13:45 (CEST) | Room -2.62



Thank you for your attention

Scientific
Storytelling
in Geodesy



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<https://geodesy.science>