Building an Operational Low-Cost Seismic Network in Ukraine Tetiana Amashukeli¹,², Luca Malatesta¹, Liudmyla Farfuliak², Oleksandr Haniiev², Bogdan Kuplovskyi², **MSCA** • UKRAINE GFZ

Vasyl Prokopyshyn², Kostiantyn Petrenko²

¹Helmholtz Centre Potsdam - GFZ German Research Centre for Geosciences, Potsdam, Germany; ²Subbotin Institute of Geophysics of the National Academy of Sciences of Ukraine, Ukraine





Helmholtz Centre POTSDAM

CHALLENGES

TECHNICAL

<u>Ukrainian seismic network require the fundamental Reconstruction.</u>

- > outdated and non-certified instruments;
- \geq data in not standard international format;
- > antiquated / destroyed infrastructure;
- > necessity for reevaluating station locations due to urban changes since

\geq limited research collaborations;

- > significant shortage of practical training and knowledge;
- > necessity for updating earthquake hazard and earthquake risk

SOLUTION / Low -Cost Network in Ukraine

The implementation of the Raspberry Shake Seismographs across schools and universities in Ukraine (28 RS, 12 laptops).

• Educational materials for seismology at middle and high school levels in UA. • The instruction "How to install your Raspberry Shake" in Ukrainian language. • Lecture: Introduction to seismic instruments and how to set up your RShake.



Institute of Geology, Taras Shevchenko National University of Kyiv



Exploring seismic records at Mykolaiv Innovation Lab (library)



u. Datsyuk with students, Lviv University



D.Levon, student, Institute of Geophysics, Kyiv

As of January 2024, Employees of the **Institute of Geophysics of the NAS**:

- 5.4% aged 21-35
- 46.6% retired and aged 61-90
- 58% PhD got more than 20 years ago
- 1 (one) PhD-student at IGPH
- war-displacement crisis across Ukraine
- 87% male aged 21-60 in military reserves
- significant lack of young generation

Raspberry Shake Seismographs in Ukraine are already detecting earthquakes, explosions, etc. The missile attack in Kyiv, Ukraine, 21.03.2024 Earthquake 01.03.2023 00:22:45 UTC, Poltava region, Ukraine, M 3.6 **AKE-HOME MESSAGE**



Low-Cost Seismic Network Initiative in Ukraine. Goals:

- functional.

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Contact: Tetiana Amashukeli, email: amashuke@gfz-potsdam.de amash.tanya@gmail.c



DEMOGRAPHIC

<u>The critical shortage of younger scientists entering the field in Ukraine poses</u> significant implications for the future of scientific research.

•11 students in applied Geophysics; •15 PhD-students in Earth Sciences



Stopgap measure to guarantee seismic observations in Ukraine while the network is not

Support for science teaching from middle to high school.

Fostering a new generation of geoscientists by introducing modern geosciences in the classes. The analysis of seismic signals, regardless of their source – earthquakes or man-made noise will form a fundamental component of any seismology-focused educational program. Integrating seismometers into schools cultivates education based on real-time seismic records.

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