

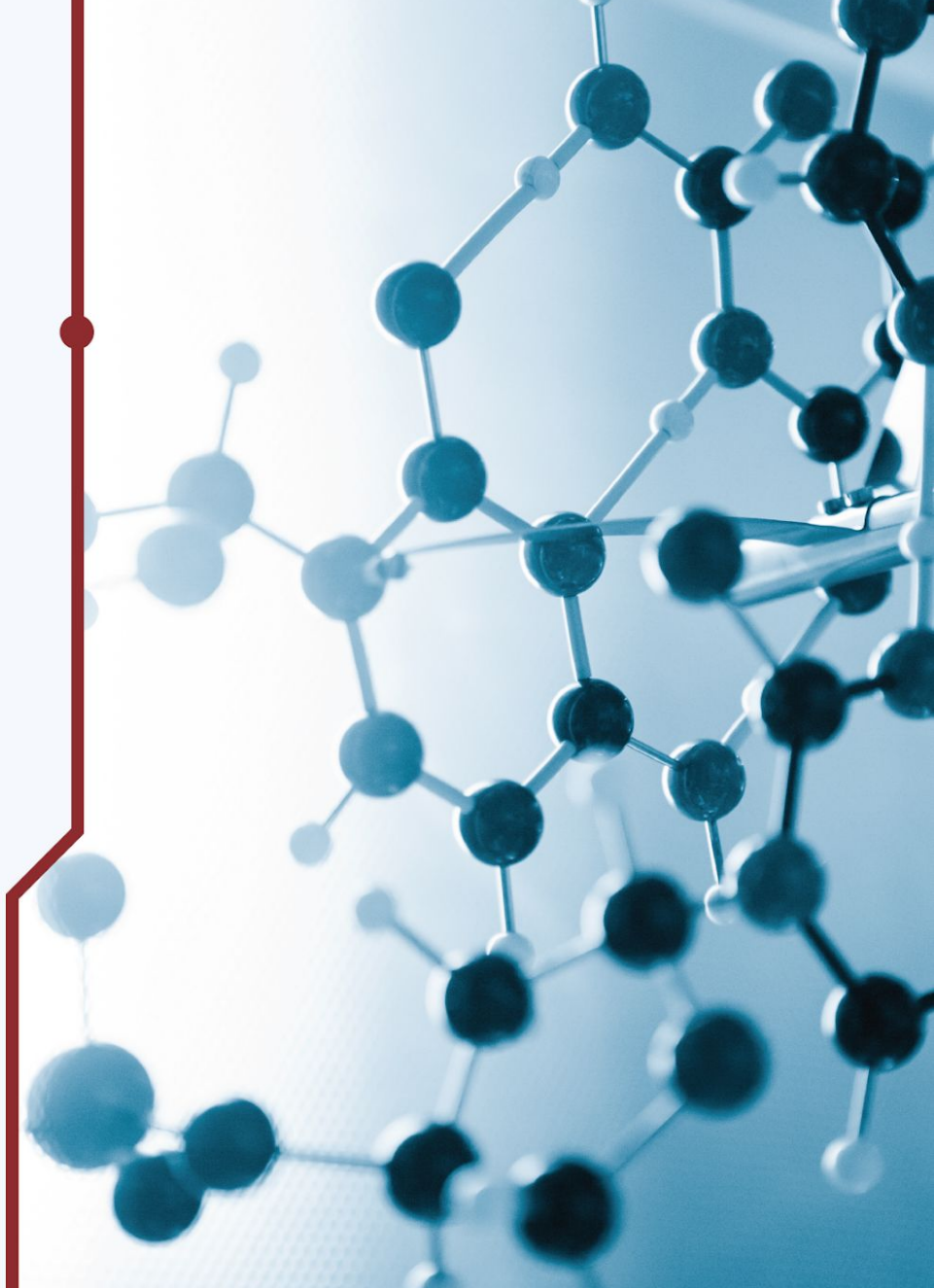


# REINFORCE

REsearch INfrastructures FOR Citizens in Europe

## **REINFORCE-ing citizen science in large research infrastructures Delivery of a policy roadmap**

Gary Hemming (EGO, REINFORCE Technical Manager)  
18 October, 2022



# Science with and for Society in Horizon 2020



Research and  
Innovation





**REINFORCE**  
REsearch INfrastructures FOR Citizens in Europe

ABOUT ▾

DEMONSTRATORS ▾

NEWS ▾

OUTREACH ▾

PLATFORM FOR ARTISTIC INTERVENTION

PROJECT RESULTS ▾

# GOALS



Citizens engagement to contribute to online frontier science



Creation of an active community of citizens who actively participate in scientific endeavors



Introduction of Responsible R&I in frontier Citizen Science Landscape



Impact assessment of frontier citizen science in science and society



Creation of a policy roadmap for other large RI willing to implement citizen science projects



Explore the potential of frontier citizen science for inclusion and diversity

Get in touch with us





# WELCOME TO THE ZOONIVERSE

## People-powered research

[See All Projects](#)

### FEATURED PROJECTS



IGUANAS FROM ABOVE



PICTURING MICHIGAN'S PAST



NASA GLOBE CLOUD GAZE



EYES ON EYES







GWitchHunters ✓

Language English ▾

ABOUT CLASSIFY TALK COLLECT RECENTS LAB

We'd love to find out about your experience on this project. Please take 5 minutes to fill in this anonymous survey <https://survey3.zsi.at/index.php/474782?lang=en>

## Attend an Interactive Citizen Science Workshop

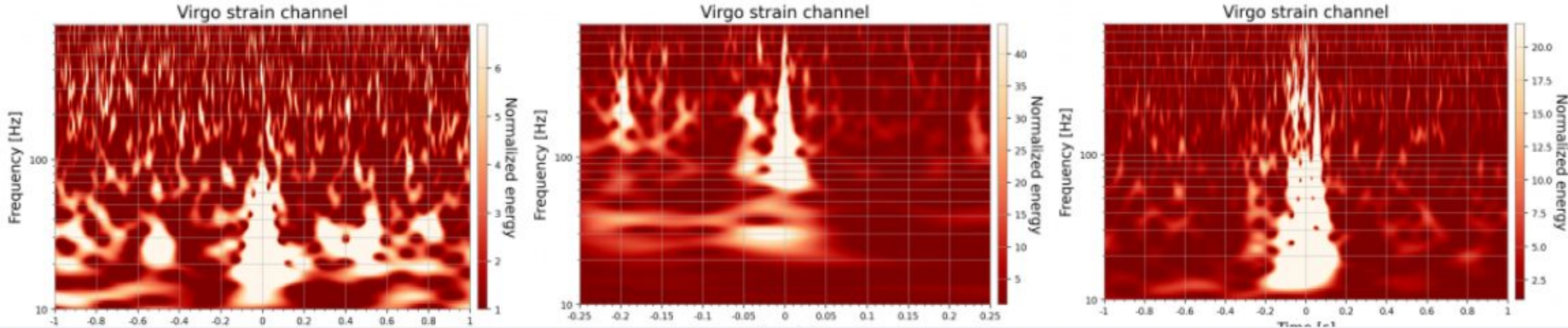
Would you like to know how citizens can play an active role in the advance of ground-breaking research and share your views and experiences? Attend the interactive workshop organized by REINFORCE! For more information and the program of the event take a look [here](#).

Help us to improve our  
Gravitational Wave detectors and  
unlock the secrets of the Universe!

[Learn more](#)

## Get started ↓

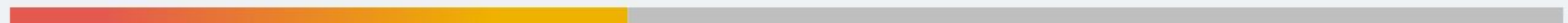
This Project is organized in increasing order of difficulty. We suggest starting in the Playground to get familiar with our data and practice with some basic "noise hunting", then progress to the next levels in ascending order of difficulty. At each level, you will discover new challenging tasks. And, if it is not enough for you, we have some special challenges that you can take on your mobile device via the Zooniverse app!

[Playground - What is a glitch?](#)[Level 1 - Catch the noise](#)[Level 2 - Find them all!](#)[Level 3 - Watch out the sensors!](#)[Mobile Challenge - Noise Profilers](#)

5 people are talking about **GWitchHunters** right now.

[Join in](#)

## GWITCHHUNTERS STATISTICS



39% Complete

2,136

Volunteers

281,194

Classifications

18,300

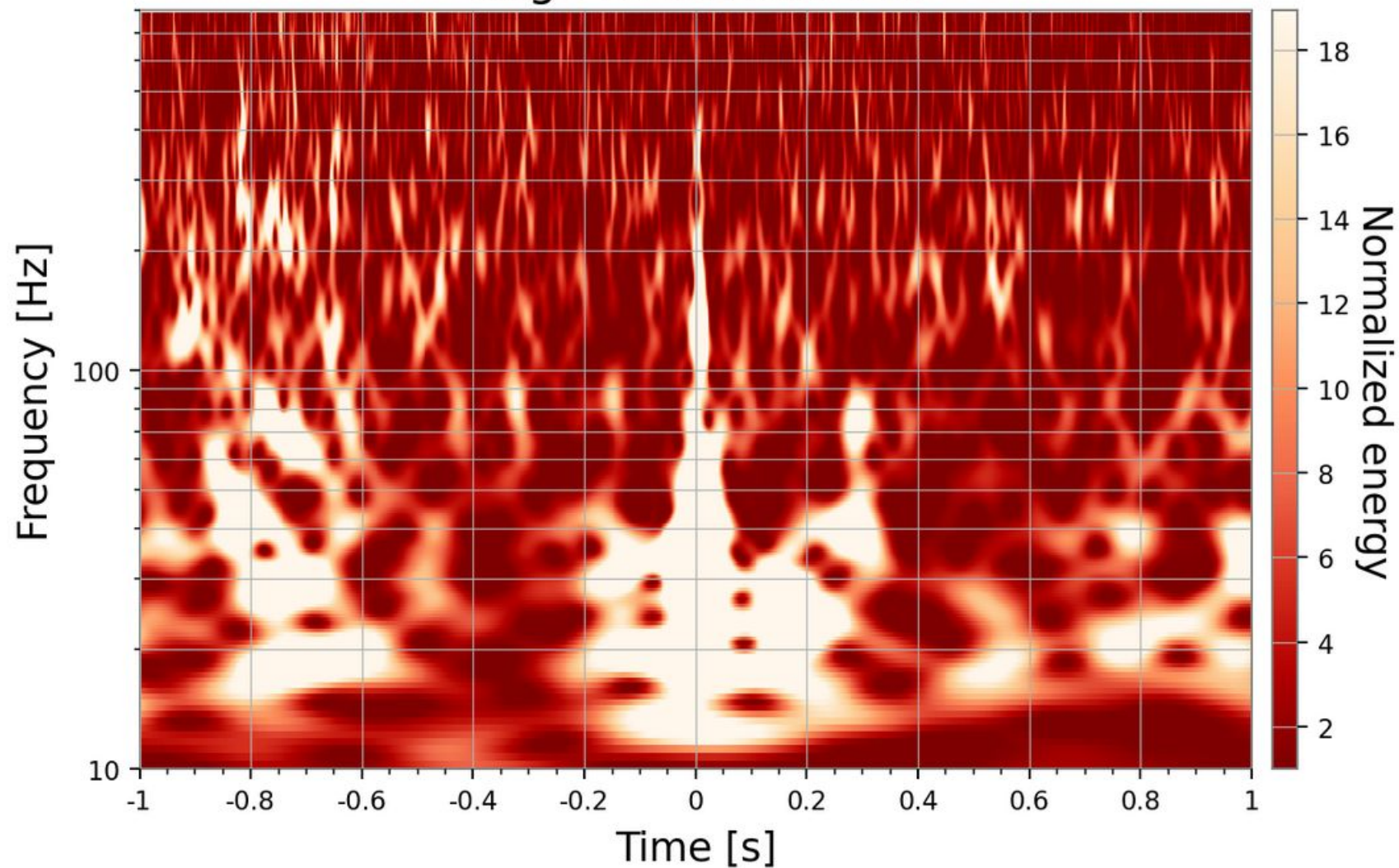
Subjects

4,028

Completed Subjects



# Virgo strain channel



🔔 You should sign in!

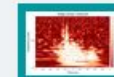
TASK

TUTORIAL

Do you see a glitch? Can you identify its class?



Blip



Extremely Loud



Helix



Koi Fish



Low Frequency Burst



Scattered Light



Scratchy



Tomte

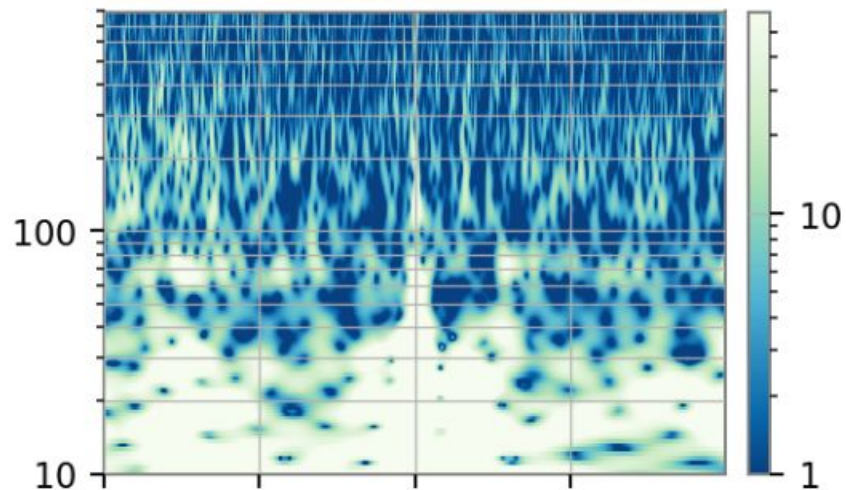


Violin Mode

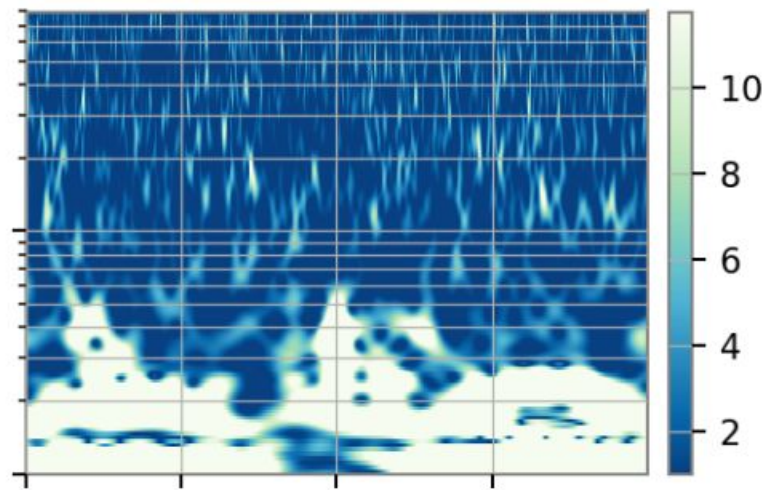


I do not see anything!

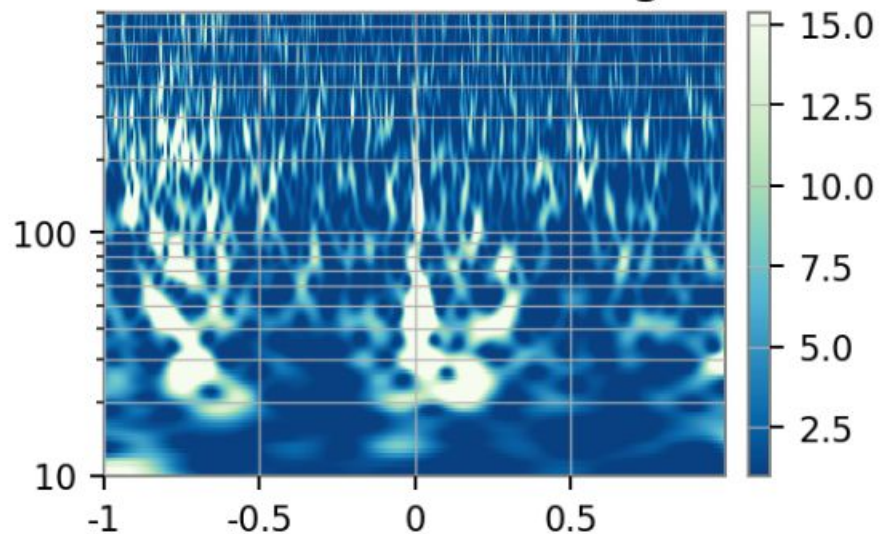
# Power in the IMC



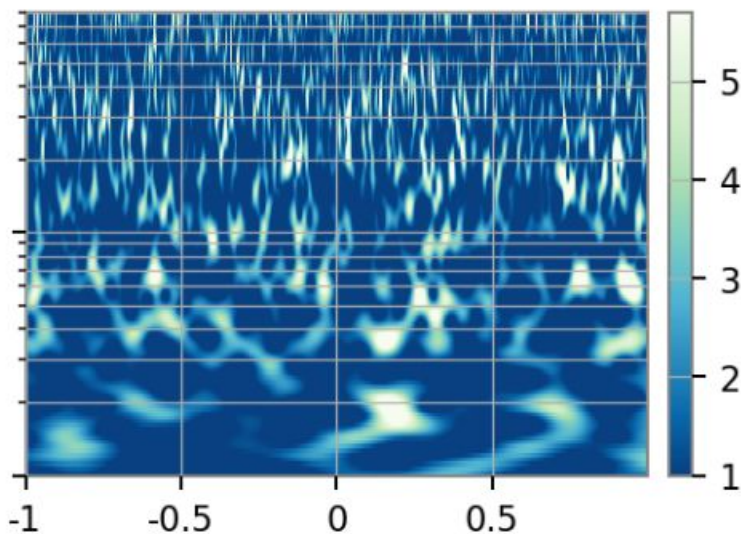
# Power in the WA



# Differential arm length



# BS accelerometer



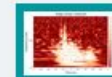
TASK

TUTORIAL

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Blip



Extremely Loud



Helix



Koi Fish



Low Frequency Burst



Scattered Light



Scratchy



Tomte



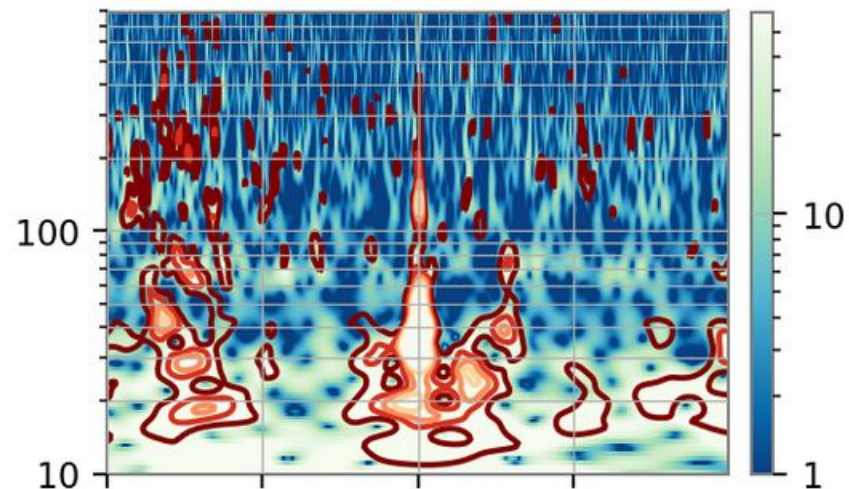
Violin Mode



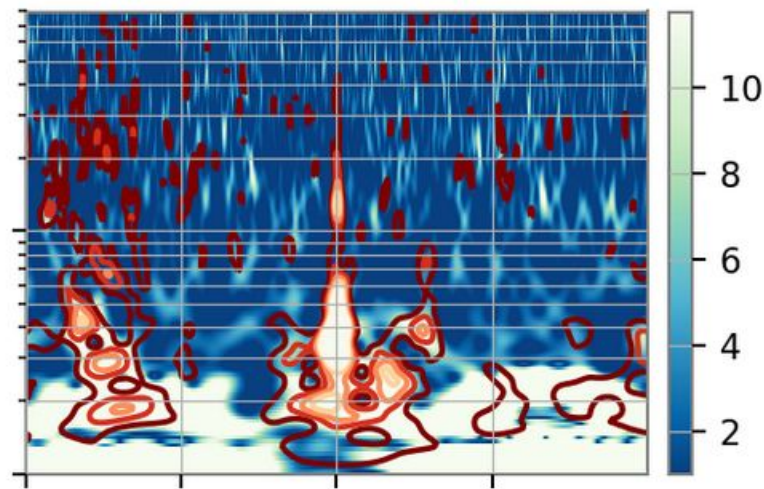
I do not see anything!



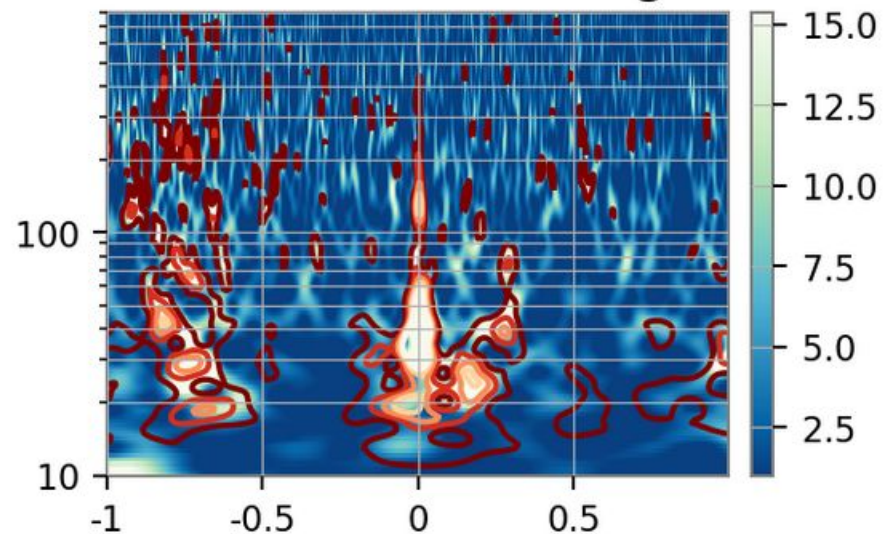
# Power in the IMC



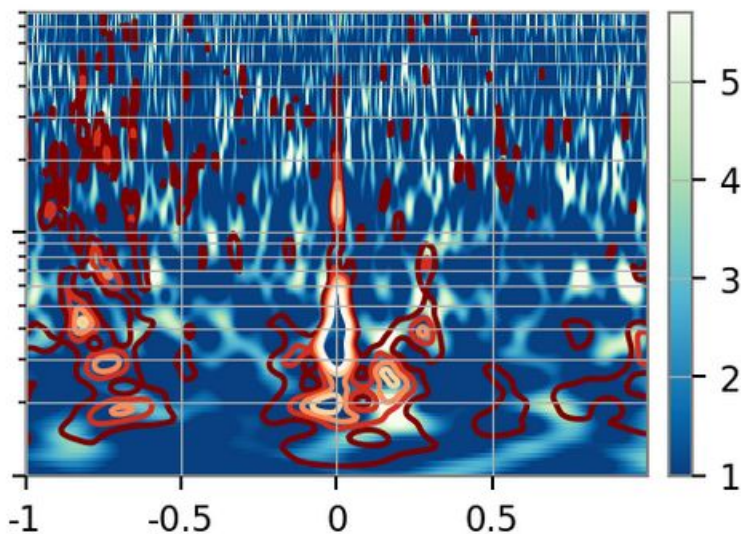
# Power in the WA



# Differential arm length



# BS accelerometer



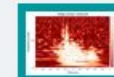
TASK

TUTORIAL

Do you see a glitch? Can you identify its class?



Blip



Extremely Loud



Helix



Koi Fish



Low Frequency Burst



Scattered Light



Scratchy



Tomte



Violin Mode



I do not see anything!



Deep Sea Explorers ✓

ABOUT CLASSIFY TALK COLLECT RECENTS LAB

Deep sea explorers great work! The scientists of KM3NeT thank you for your contribution! You have reached 10,000 classifications! How much more can you do until the end of March? Let's find out...

### Announcements :

**Workshop announcement** : Would you like to know how citizens can play an active role in the advance of ground-breaking research and share your views and experiences? Attend the **interactive workshop** organized by REINFORCE! For more information and the program of the event take a look [here](#).

**Survey** : We'd also love to find out about your experience on this project! Please take 5 minutes to fill in the anonymous survey <https://survey3.zsi.at/index.php/734131?lang=en>

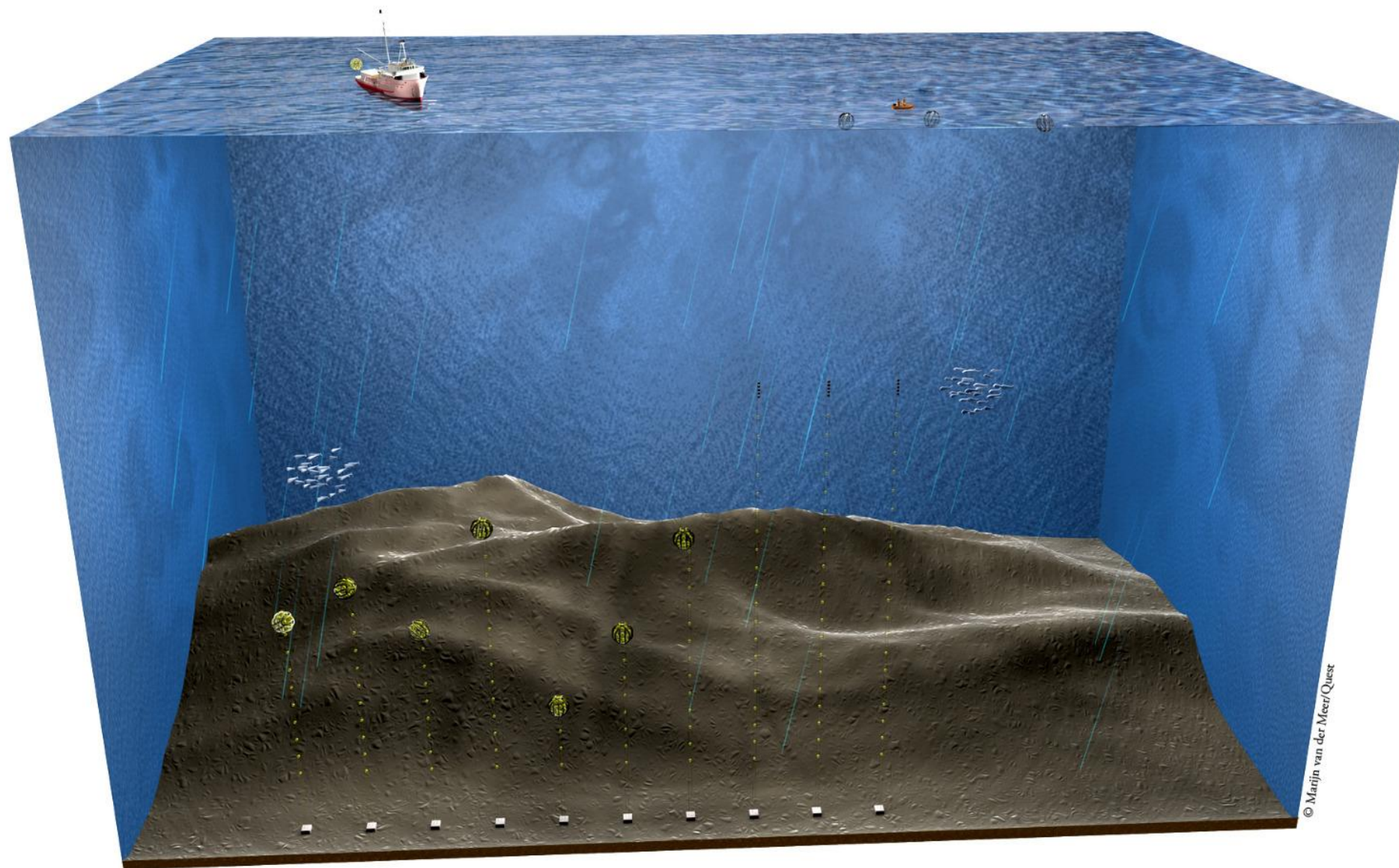
**Great work!** Looks like this project is out of data at the moment!

[See the results](#) or [dismiss this message](#)

Help us to study bio-activity in the deep sea! With your help, we will better understand marine sources of noise in the KM3NeT detector, making our search for neutrinos

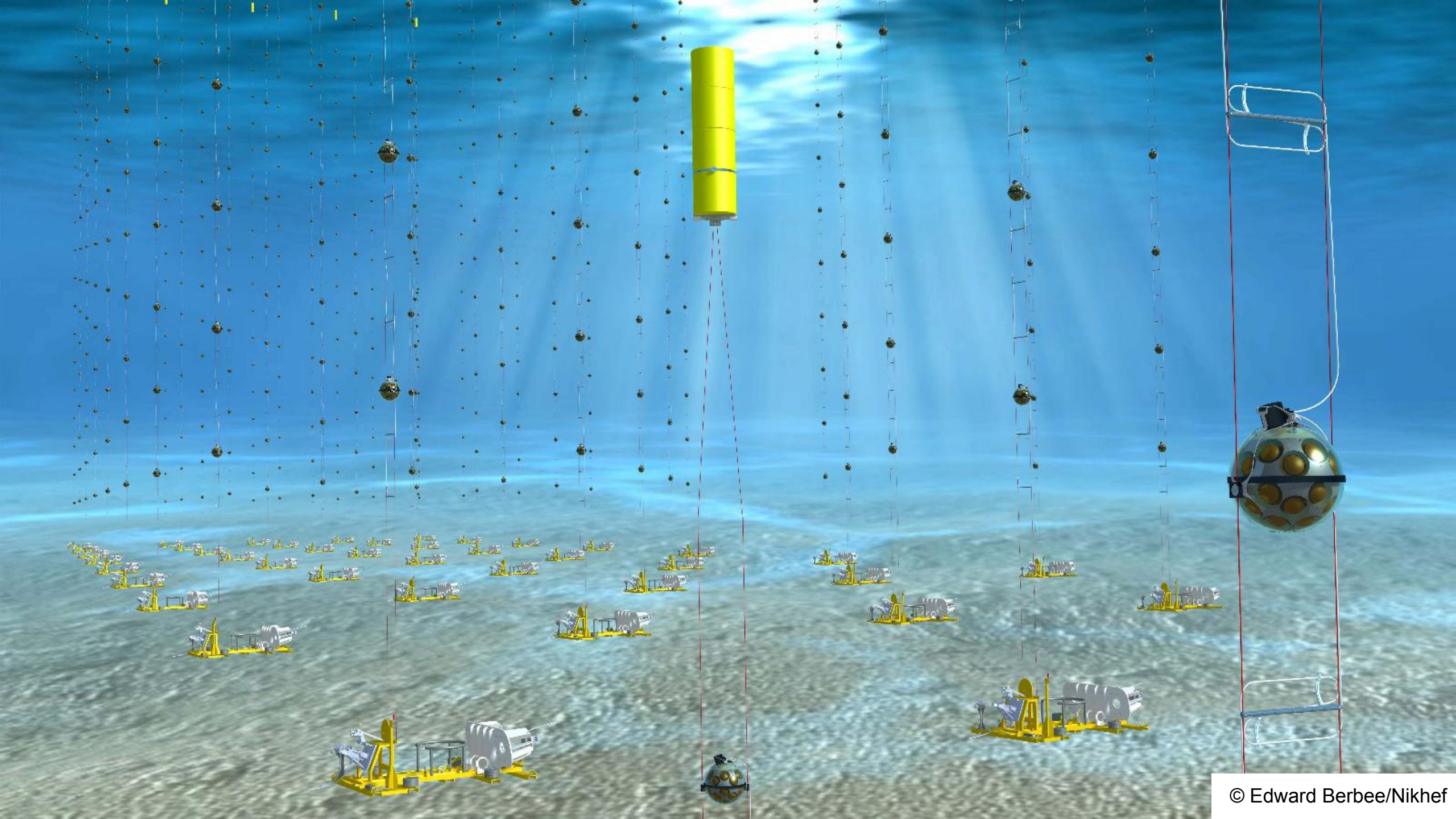






© Marijn van der Meer/Quest

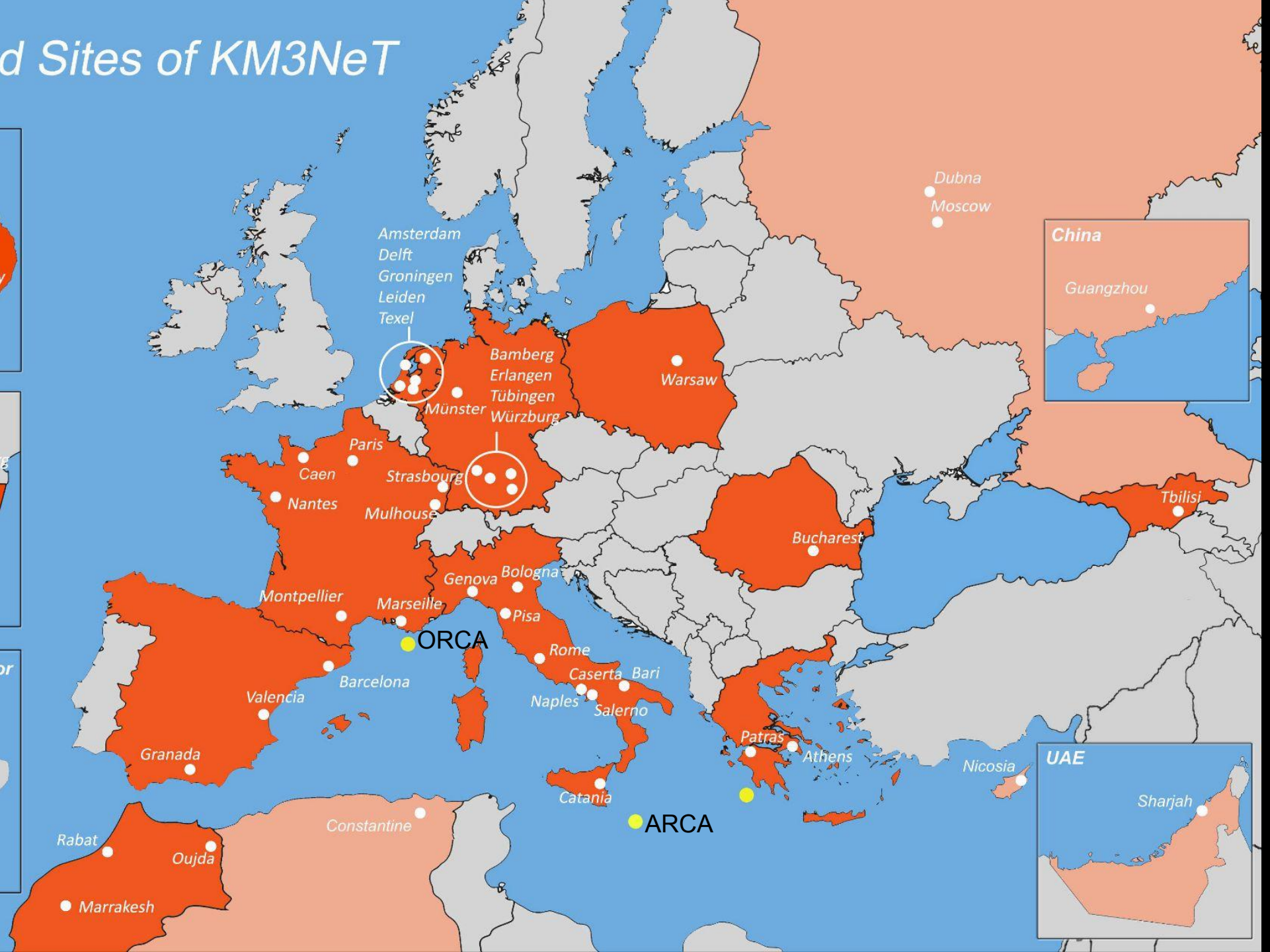




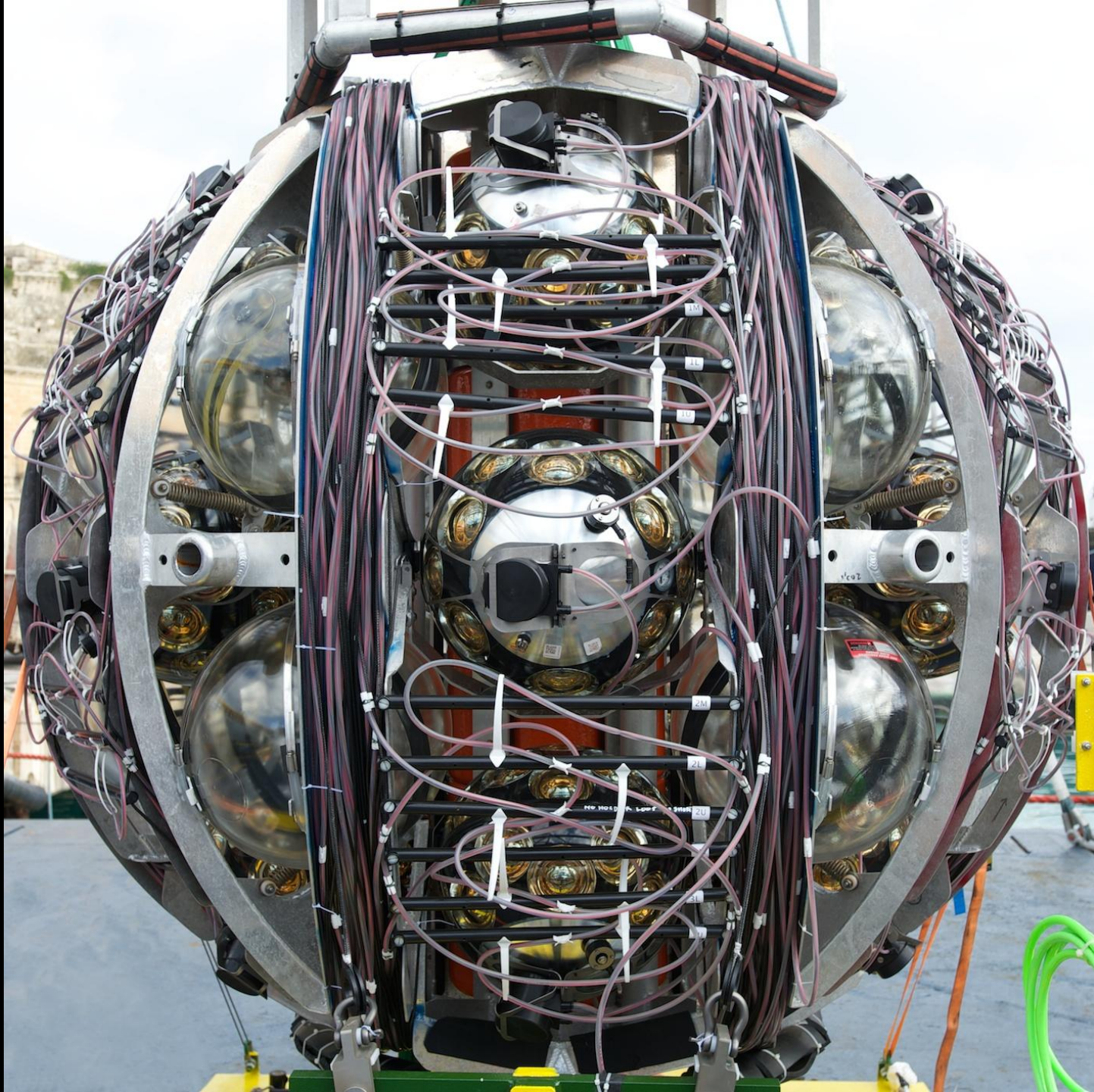




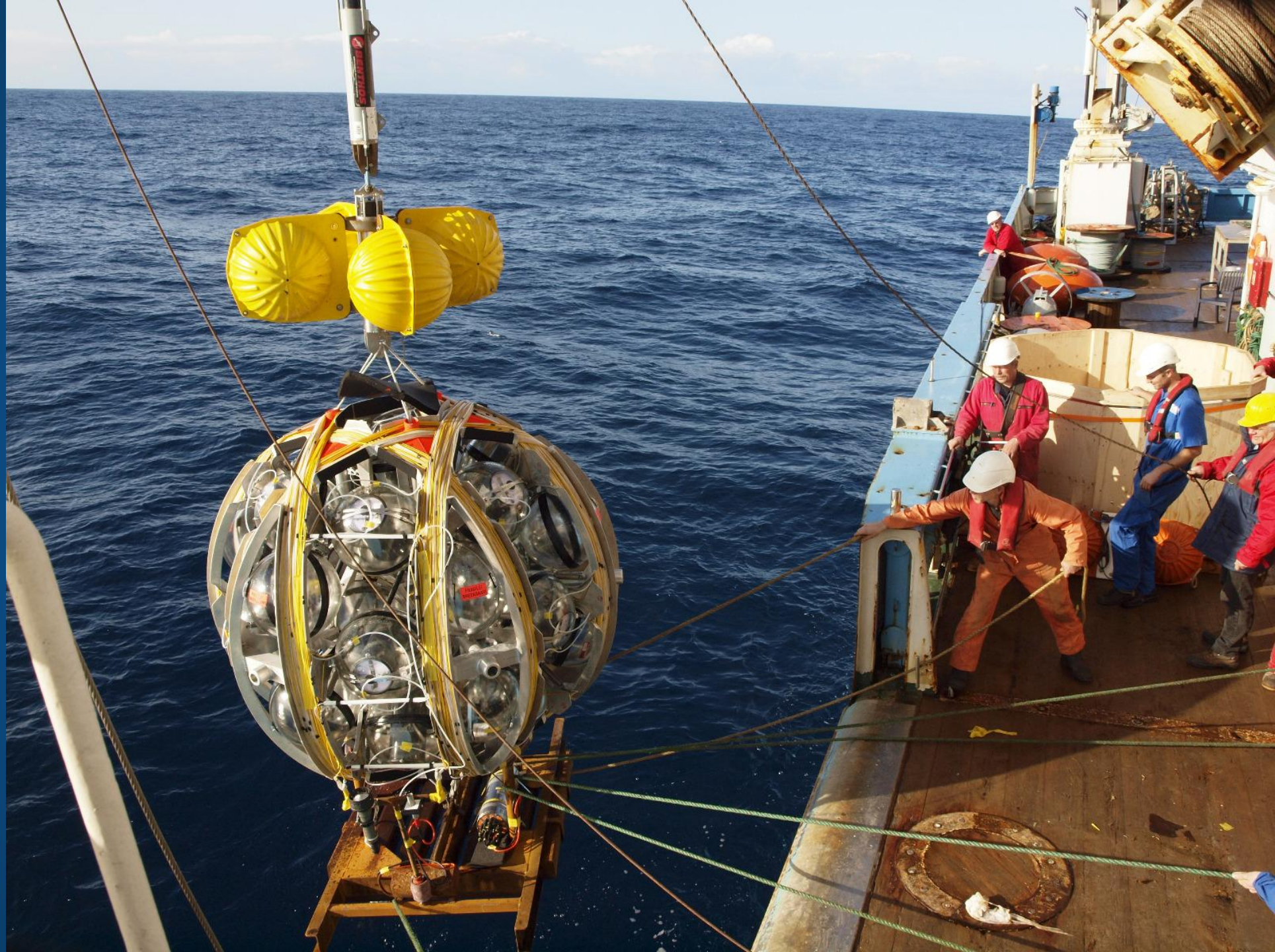
# Cities and Sites of KM3NeT



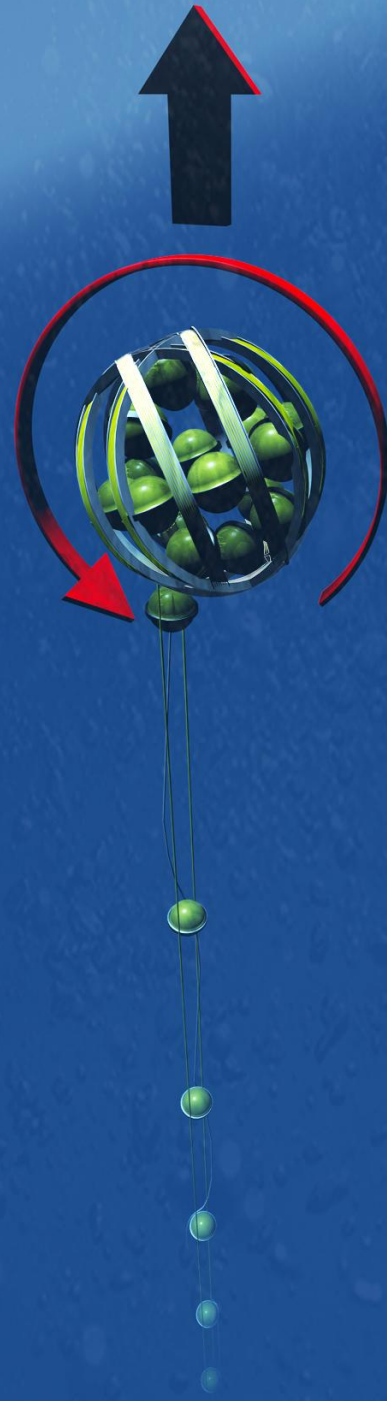










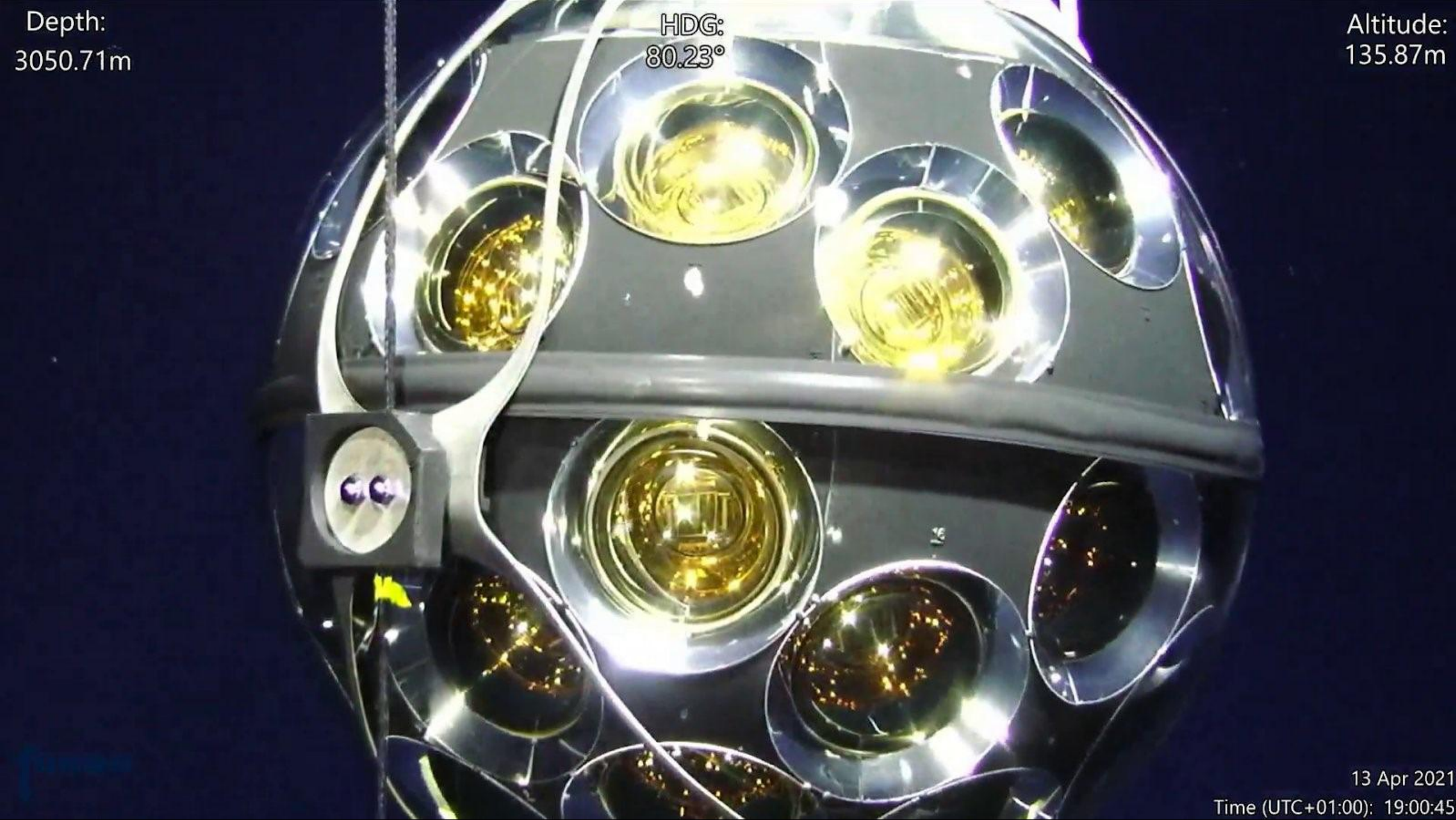












Depth:  
3050.71m

HDG:  
80.23°

Altitude:  
135.87m

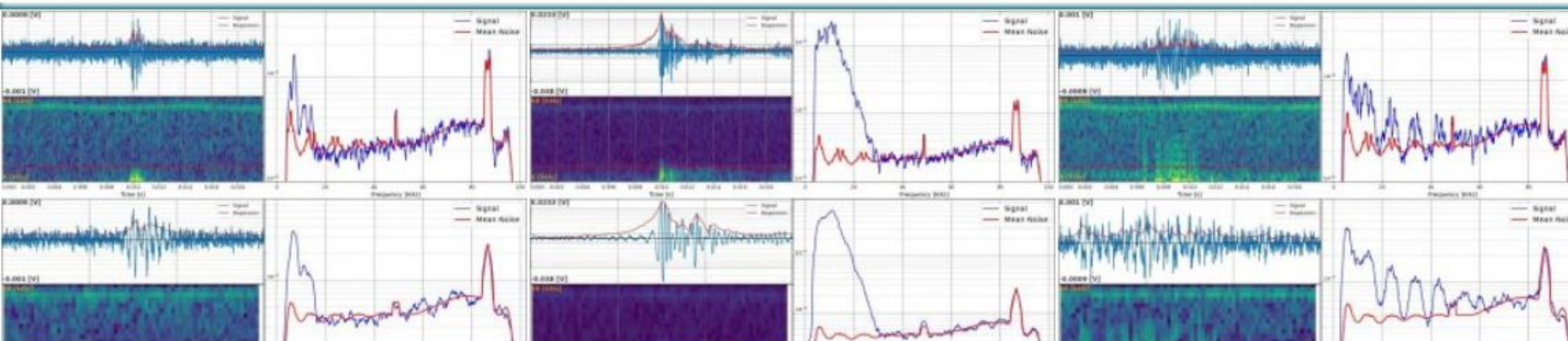
13 Apr 2021  
Time (UTC+01:00): 19:00:45

Get started ↓

You can classify light (BIOLUMINESCENCE) or acoustic (BIOACOUSTICS) signals. Of course, you can also do both!

BIOLUMINESCENCE 1: Peak counting

BIOACOUSTICS 1: Cetacean click identification



1 person is talking about **Deep Sea Explorers** right now.

Join in

## DEEP SEA EXPLORERS STATISTICS

100% Complete

389

Volunteers

11,692

Classifications

528

Subjects

528

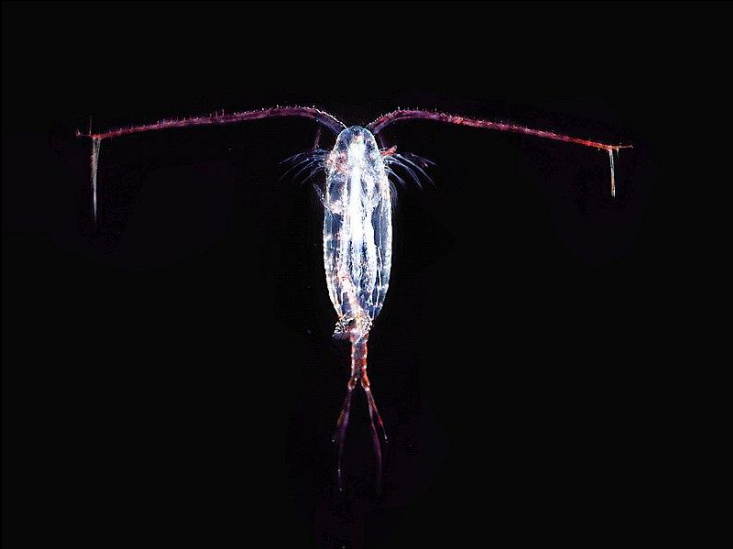
Completed Subjects

WORDS FROM THE RESEARCHER

ABOUT DEEP SEA EXPLORERS

EXTERNAL PROJECT LINKS





## COPEPODI

Uwe Kils (GNU Free Documentation License)



## LOFIFORMI

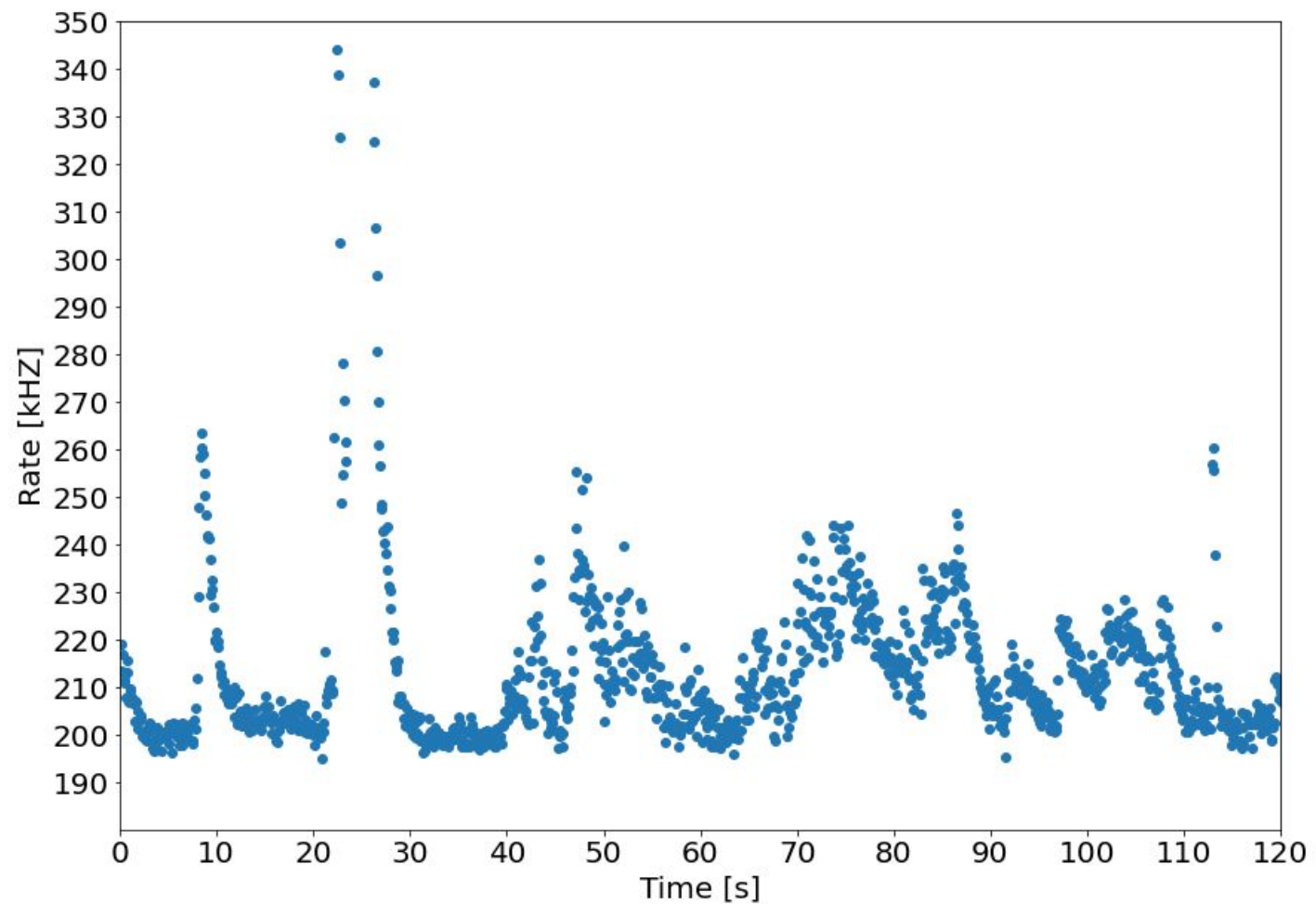
Masaki Miya et al.  
(Creative Commons Attribution 2.0 Generic)



## MEDUSE

© Hans Hillewaert / CC BY-SA 4.0

FINISHED!



SWITCH TO DARK THEME

TASK

TUTORIAL

What is the classification of this event?

One peak

Two peaks

Multiple peaks

Weird

NEED SOME HELP WITH THIS TASK?

Done & Talk

Done

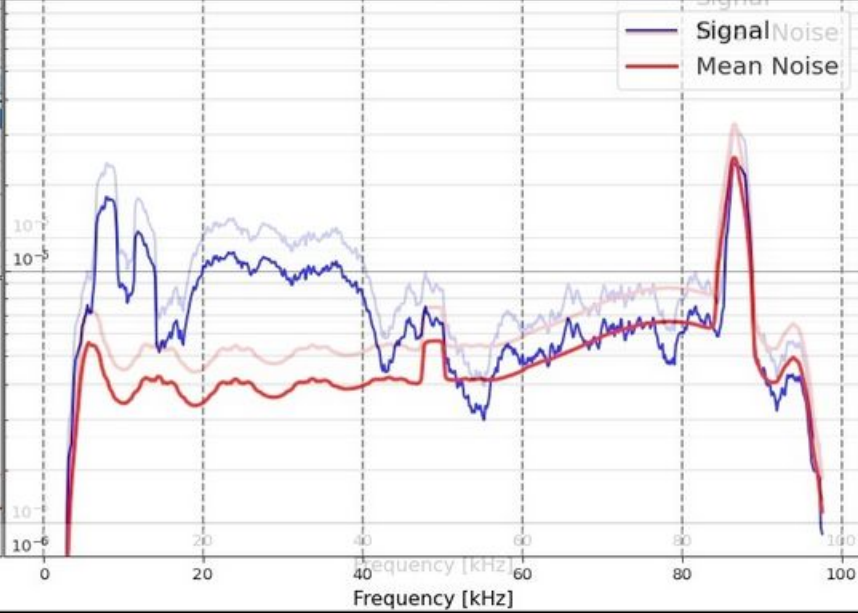
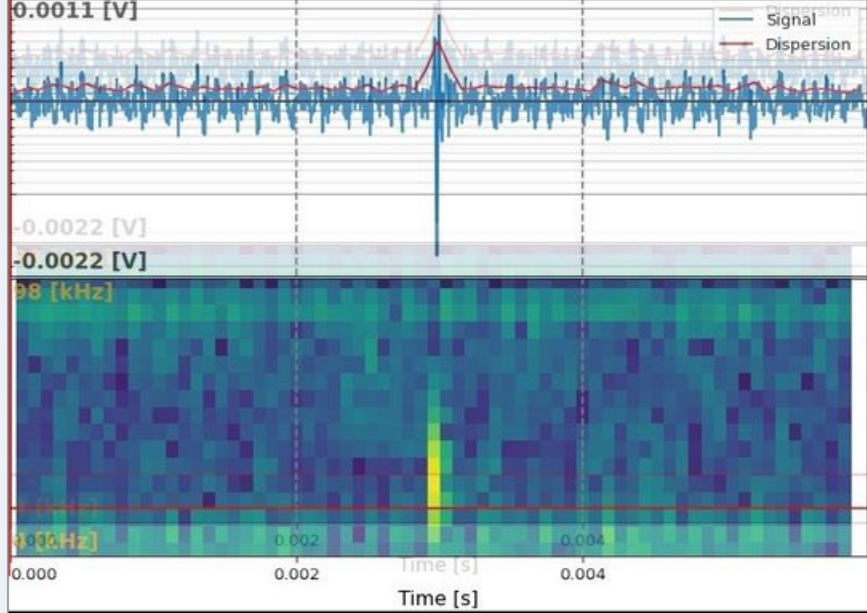
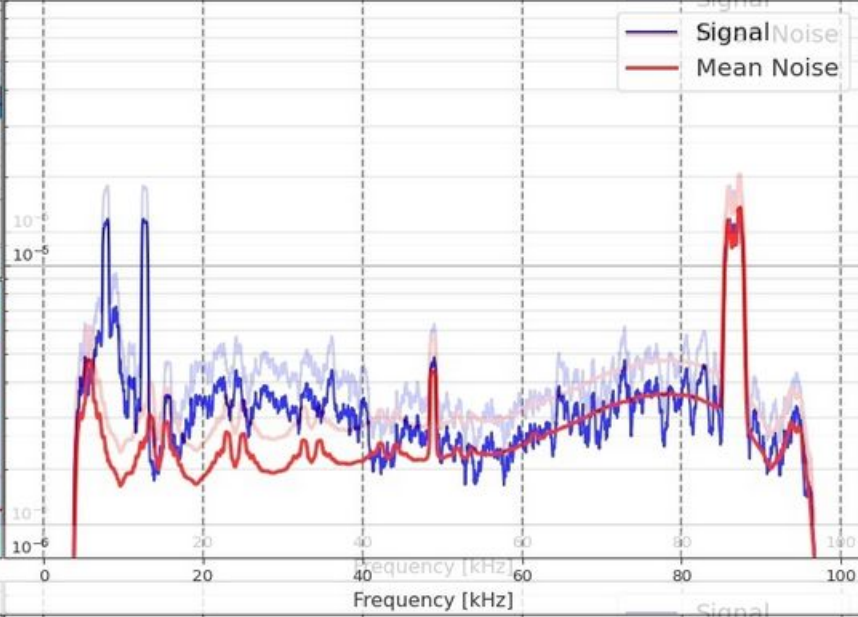
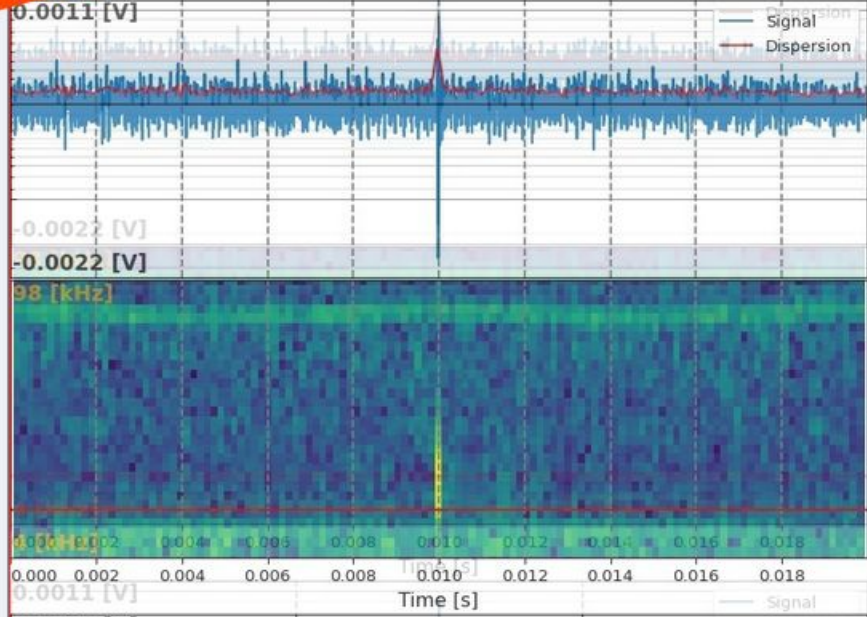


FIELD GUIDE





FINISHED!



TASK

TUTORIAL

What is your proposed identification?

Sperm whale

Short-finned pilot whale

Pure noise

Something else

NEED SOME HELP WITH THIS TASK?

Done & Talk

Done



FIELD GUIDE

SWITCH TO DARK THEME





## New Particle Search at CERN

ABOUT CLASSIFY TALK COLLECT RECENTS LAB

We'd love to find out about your experience on this project! Please take 5 minutes to fill in the anonymous survey <https://survey3.zsi.at/index.php/734131?lang=en>

### Attend an Interactive Citizen Science Workshop

Would you like to know how citizens can play an active role in the advance of ground-breaking research and share your views and experiences? Attend the interactive workshop organized by REINFORCE! For more information and the program of the event take a look [here](#).

Help the ATLAS scientists look for  
signs of massive, long-lived  
particles produced in the Large  
Hadron Collider, which could be a  
sign of new physics!

[Learn more](#)

## Get started ↓

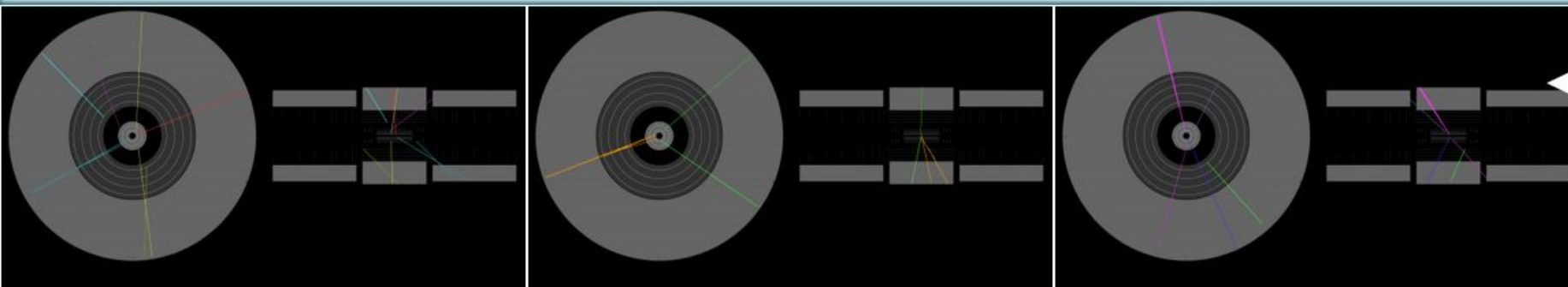
The project consists of three stages. We strongly recommend you take part in them in order. In Stage 1, you will identify Displaced Vertices, which are the signatures of long-lived particles. In Stage 2, you will identify the signatures of known particles (electrons, muons, photons) in the ATLAS detector. In Stage 3 you will: a) search for Higgs boson decays to a pair of photons and b) look for long-lived particles decaying far from the beam collision point. NOTE: In stages 2 and 3 you will be directed to an external online tool called HYPATIA. It is run by the research team of this project and is not hosted on Zooniverse.

Stage 1 - Displaced Vertex Identification

Stage 2 - Particle Identification

Stage 3a - Study of Higgs Bosons

Stage 3b - Discovery of Long Lived Particles



3 people are talking about **New Particle Search at CERN** right now.

Join in

## NEW PARTICLE SEARCH AT CERN STATISTICS



4% Complete

1,320

Volunteers

55,081

Classifications

5,080

Subjects

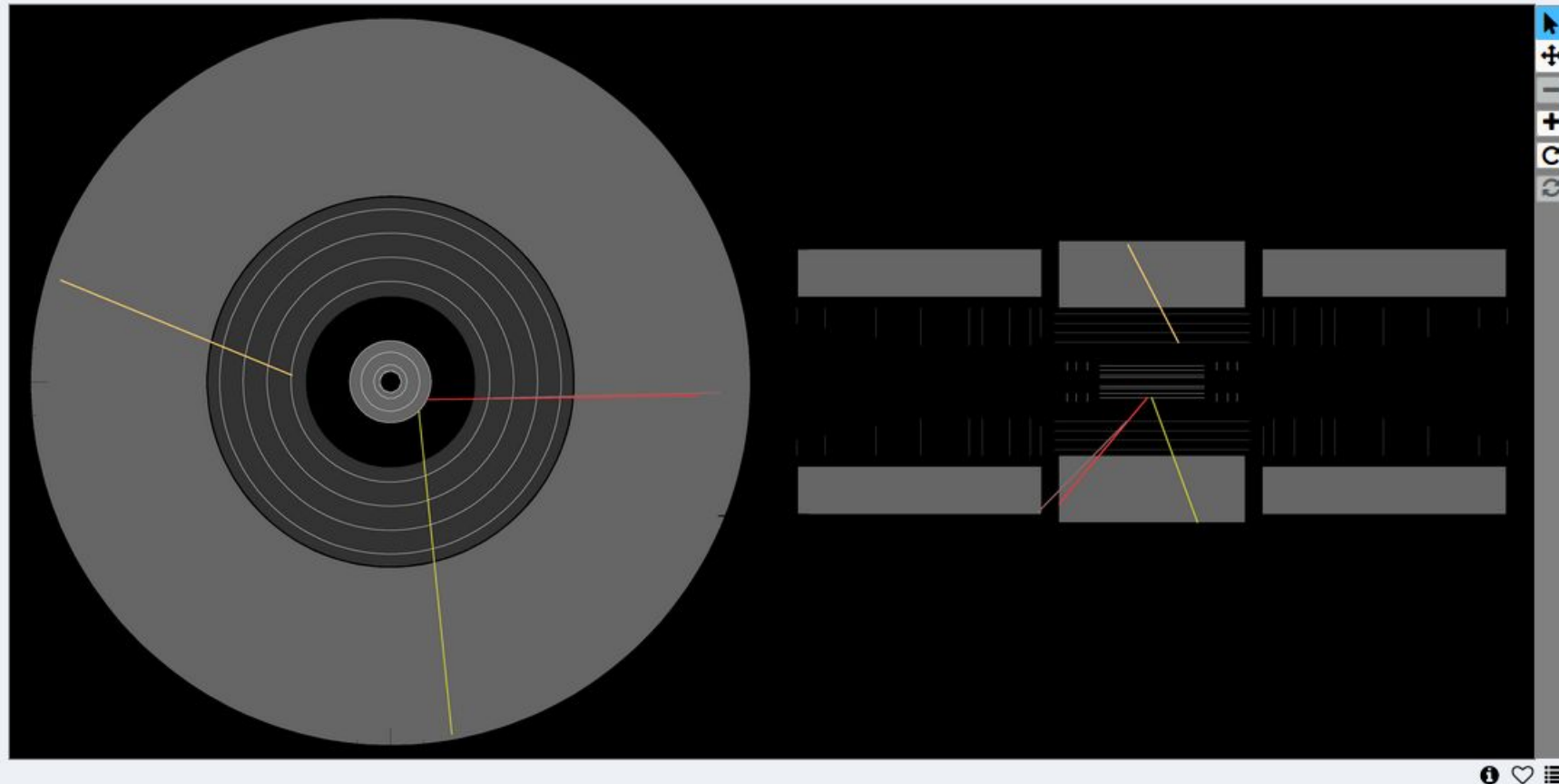
946

Completed Subjects



## Attend an Interactive Citizen Science Workshop

Would you like to know how citizens can play an active role in the advance of ground-breaking research and share your views and experiences? Attend the interactive workshop organized by REINFORCE! For more information and the program of the event take a look [here](#).



SWITCH TO DARK THEME

### TASK

### TUTORIAL

Place a marker on any displaced vertices that you can see. If you do not see any displaced vertices, just click "Done".

Remember to place marks in both the transversal (left) and longitudinal (right) views.

**Please make sure that you have read the detailed instructions provided at the help link below.**



Displaced vertex

0 of 0 required drawn

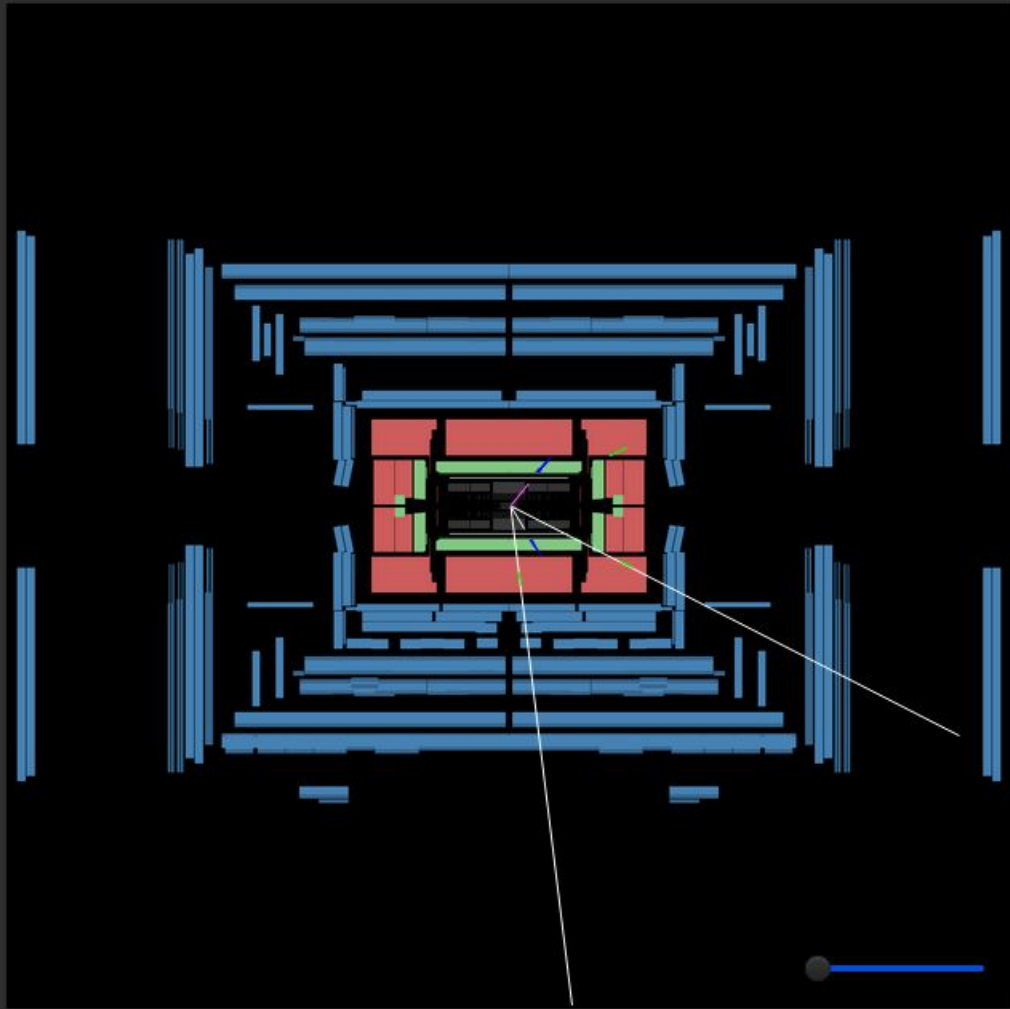
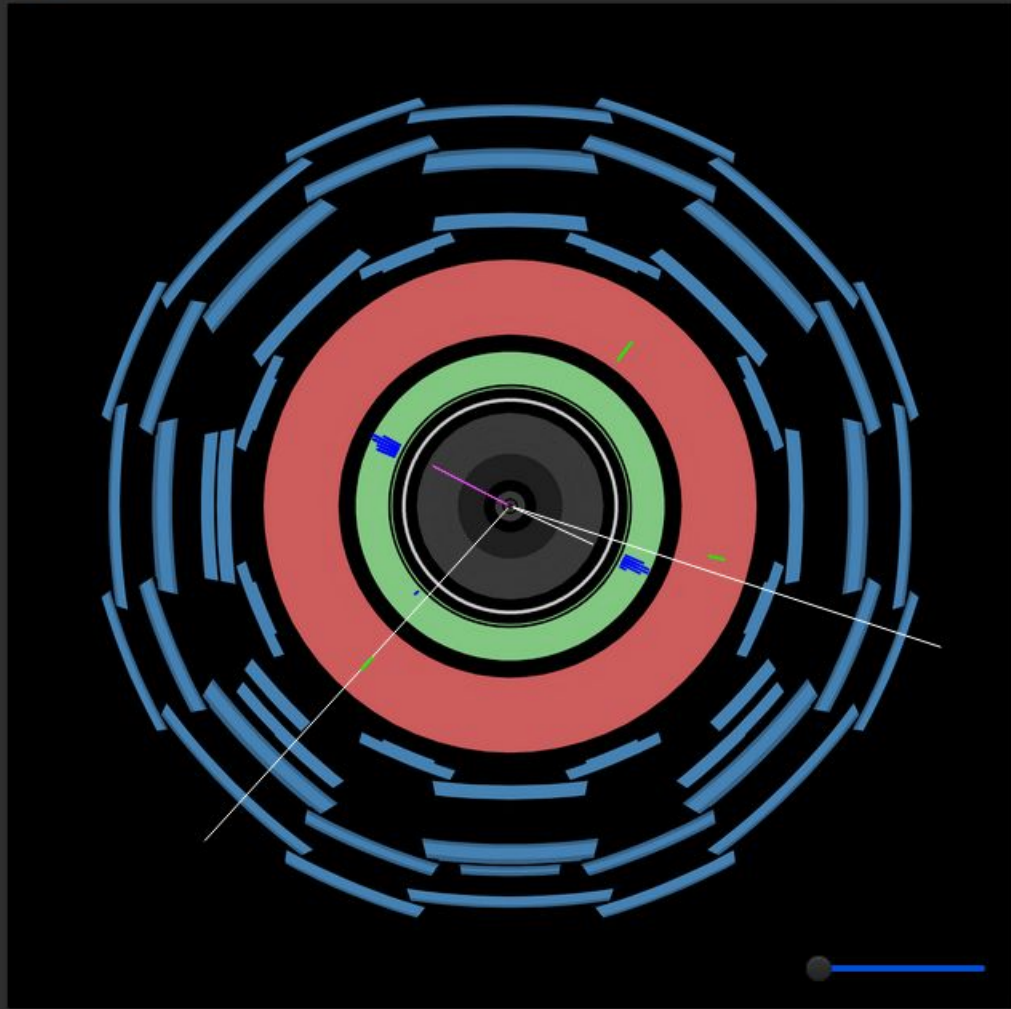
NEED SOME HELP WITH THIS TASK?

Done & Talk

Done



FIELD GUIDE



+ Electron					+ Muon					+ Photon					+ Conv. Photon					- Delete					→ Next					? Help				
Particle		+/-	p <sub>T</sub> [GeV]		φ [rad]		θ [rad]		Particle		+/-	p <sub>T</sub> [GeV]		e/μ/γ																				
track_1		-	52.1		2.66		0.89																											
track_2		-	14.43		-0.32		1.45																											
track_3		+	7.54		-2.31		0.47																											
track_4		+	28.28		-0.43		1.03																											
cluster_1			56.12		2.67		0.86																											





Cosmic Muon Images ✓

ABOUT CLASSIFY TALK COLLECT RECENTS LAB

We'd love to find out about your experience on this project! Please take 5 minutes to fill in the anonymous survey <https://survey3.zsi.at/index.php/734131?lang=en>

Congratulations everyone! Thank you for your contribution! You are getting close to 50,000 classifications! How fast can you get there? Keep up the good work [here](#)!

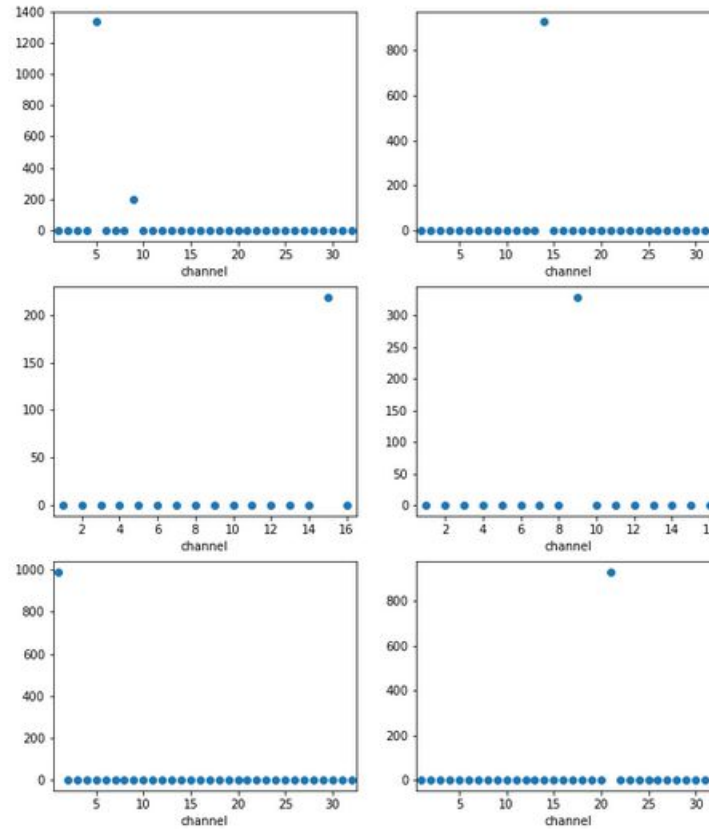
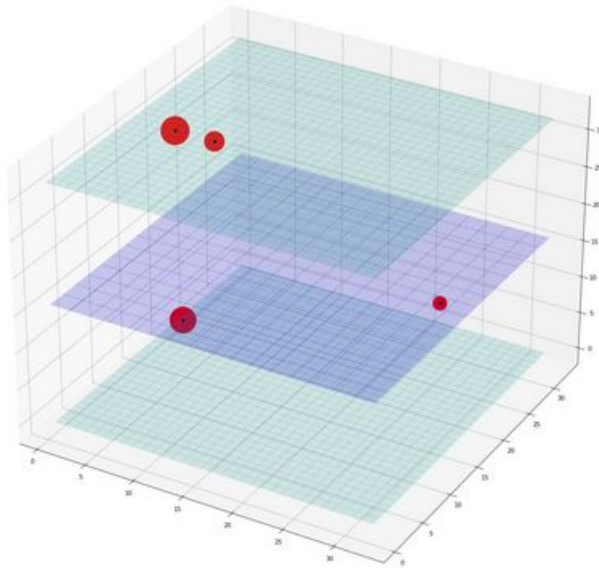
### Attend a Citizen Science Interactive Workshop

Would you like to know how citizens can play an active role in the advance of ground-breaking research and share your views and experiences? Attend the **interactive workshop** organized by REINFORCE! For more information and the program of the event take a look [here](#).

Using Muon Tomography we can  
probe the internal structure of  
**massive objects**, like volcanoes,  
with particles from stars and  
galaxies far far away... help us  
identify these particles inside our  
detectors

## Attend a Citizen Science Interactive Workshop

Would you like to know how citizens can play an active role in the advance of ground-breaking research and share your views and experiences? Attend the **interactive workshop** organized by REINFORCE! For more information and the program of the event take a look [here](#).



### TASK

### TUTORIAL

Is there a pattern?

Note: finding the proper lines by eye is not always easy. You can answer "Yes..." and if your trials in the next step fail, you can always come back here and change your answer.

yes i can see a pattern (track or track with extra points)

no track and nothing remarkable

NEED SOME HELP WITH THIS TASK?

Done & Talk

Done



SWITCH TO DARK THEME





# sonoUno Web Interface

SonoUno is a sonification software for astronomical data presented on a table, allowing the user to configure the generated plot and some features of the sound.

[HOME](#)[QUICK START](#)

☐ Do not show this landing page again.

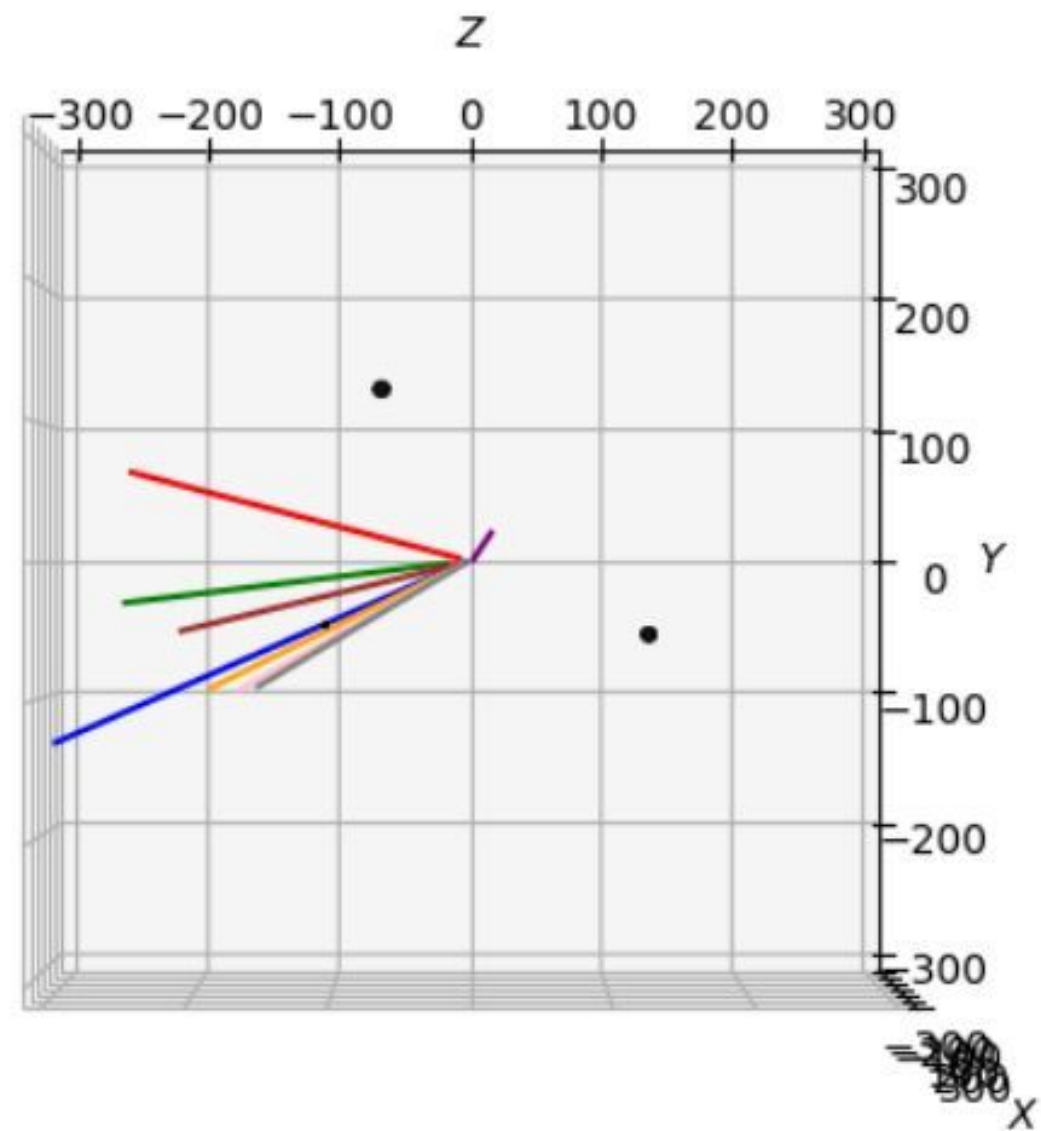
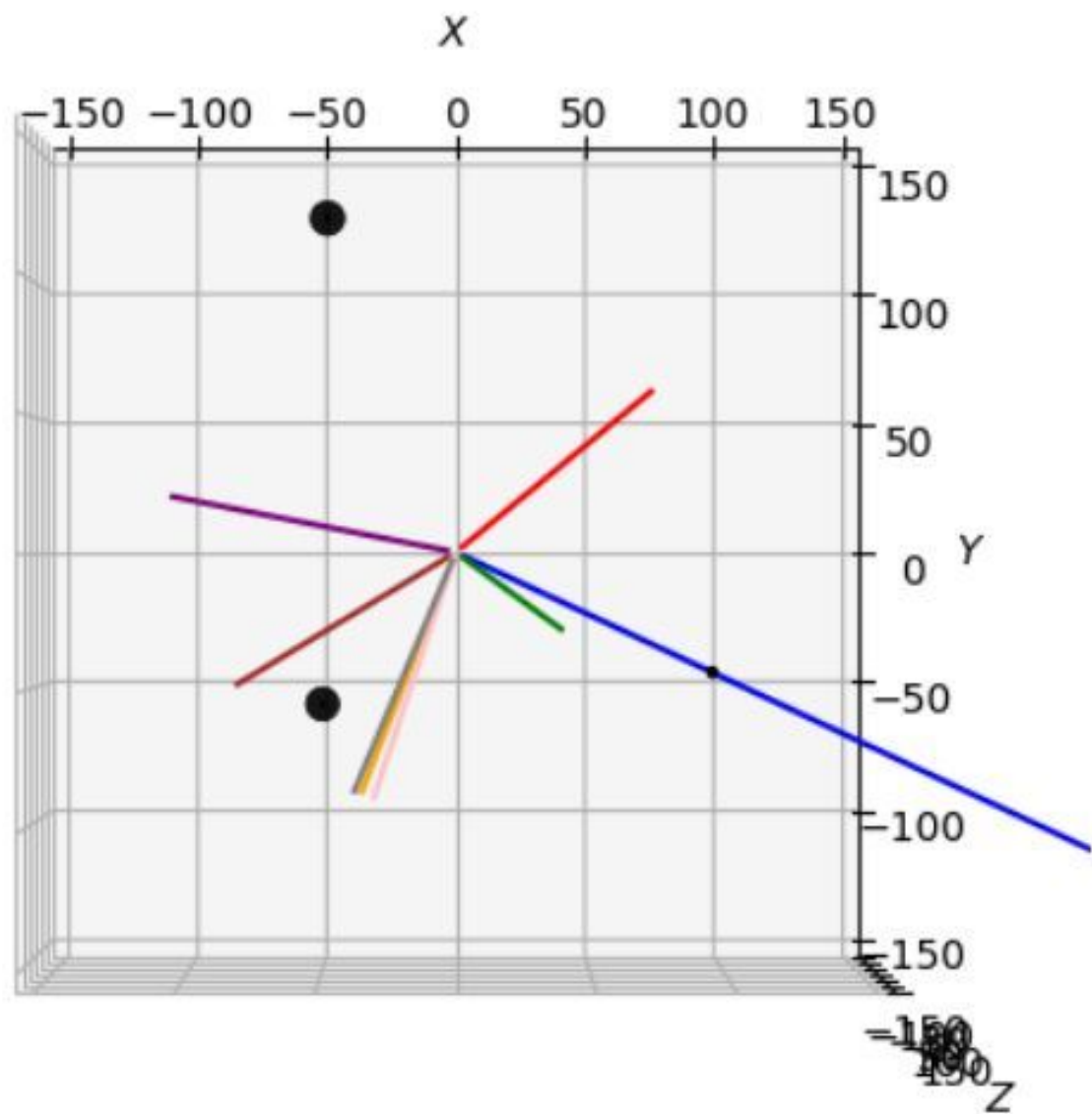
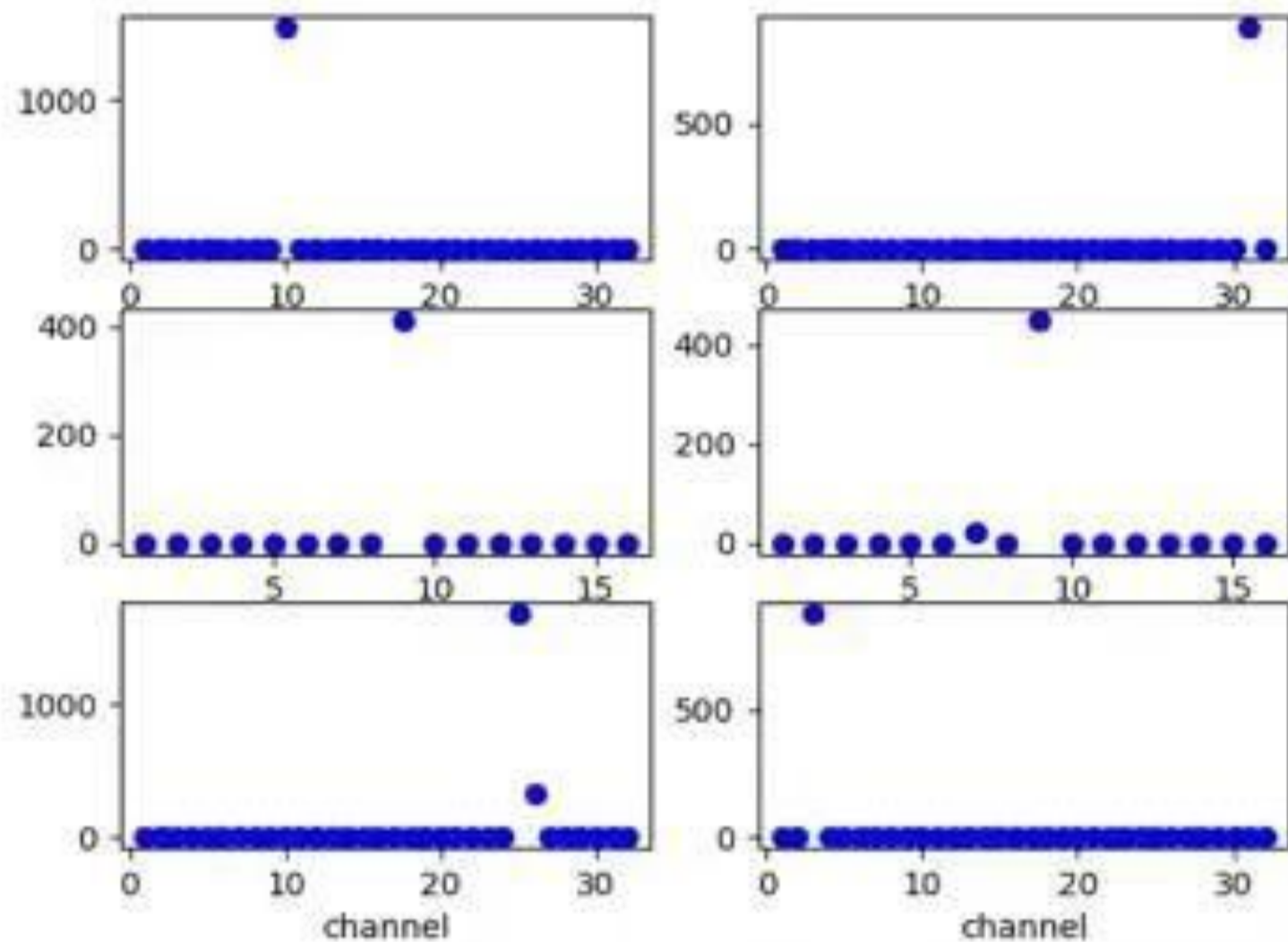
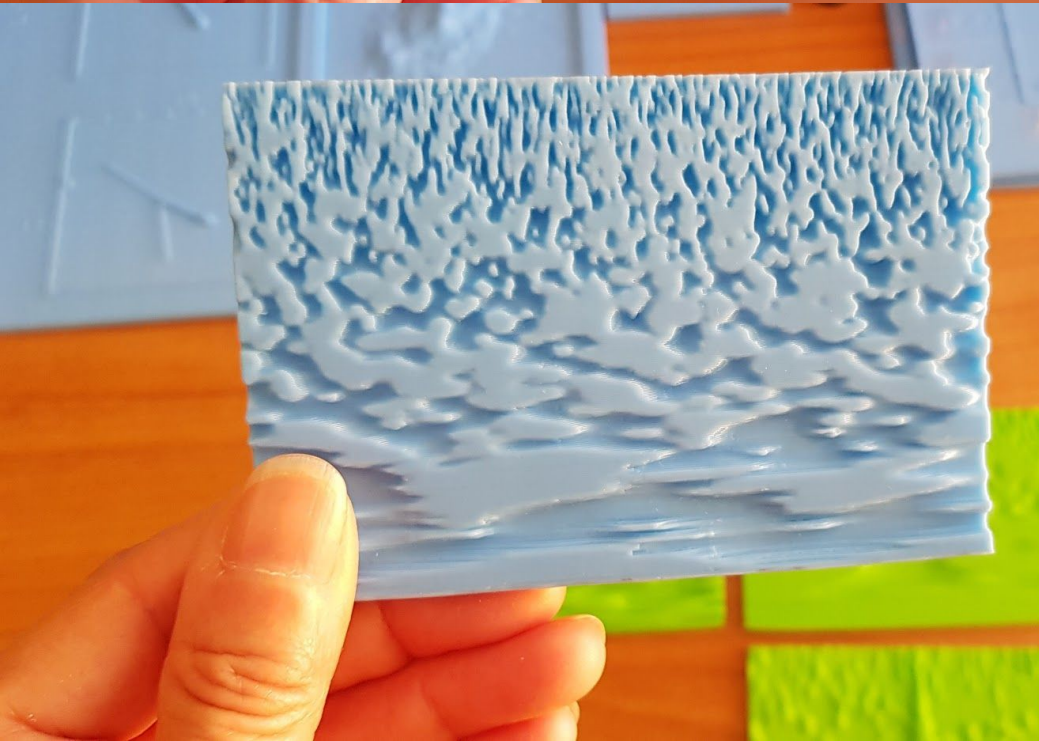
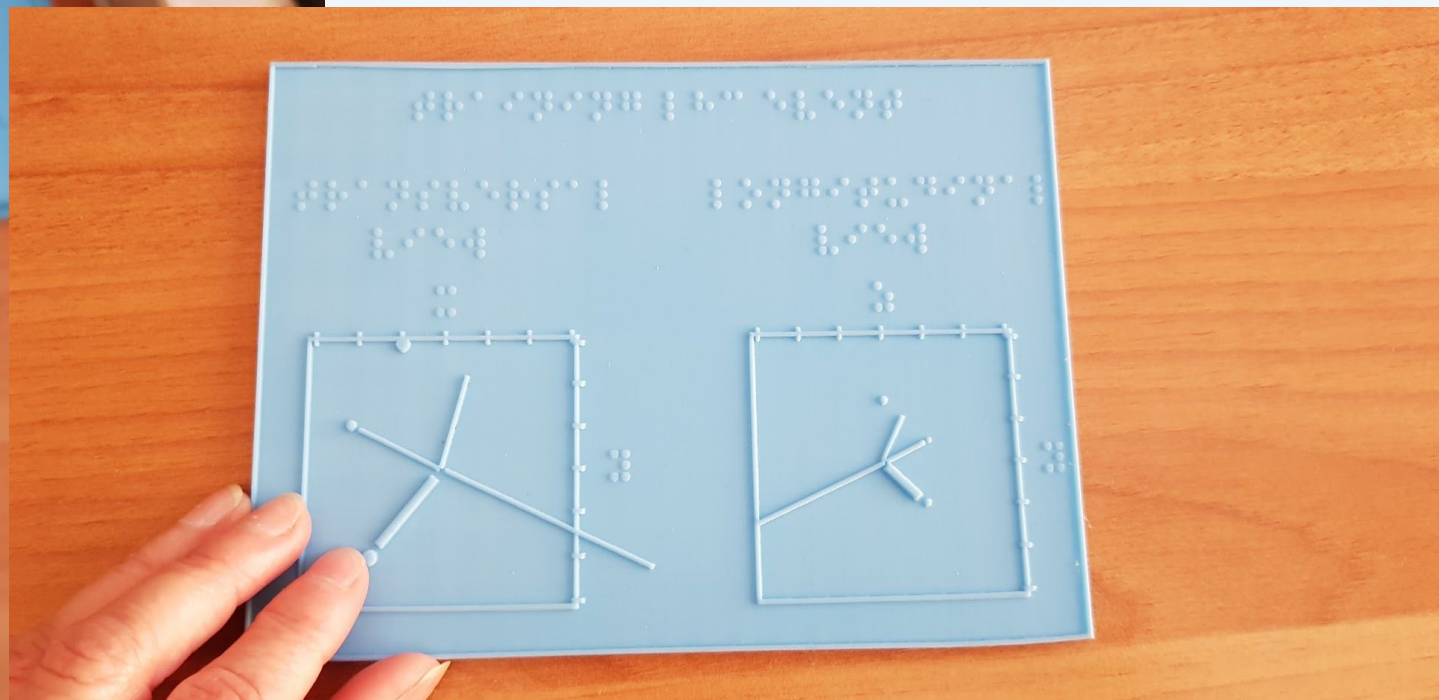
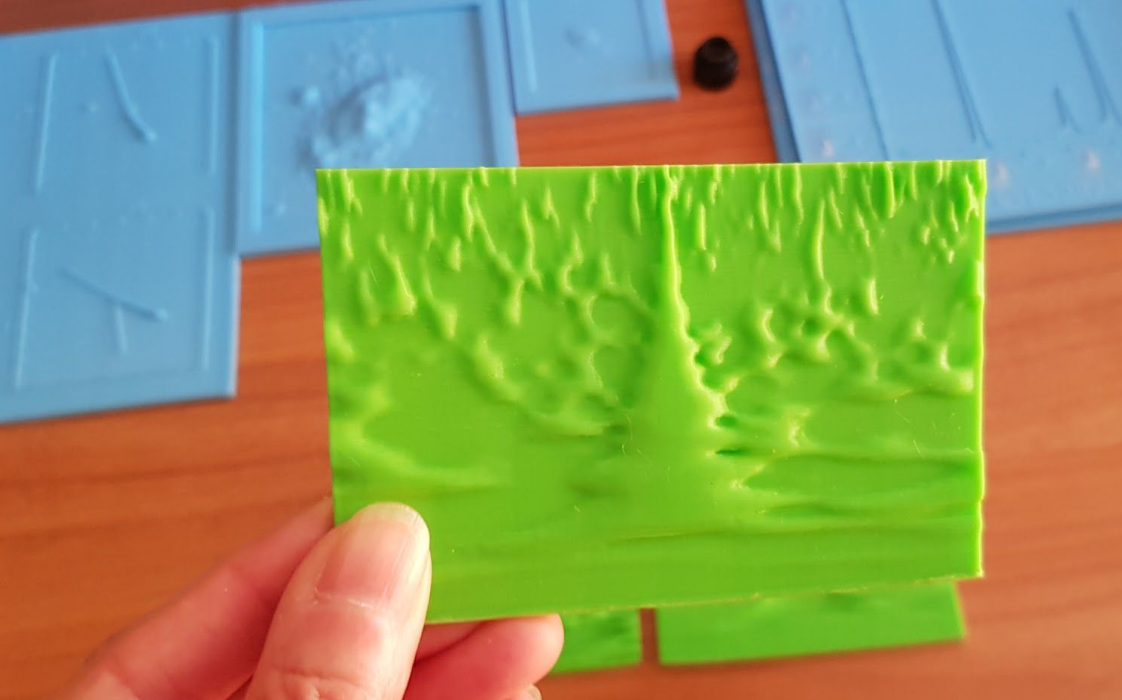




Figure 1

5762520\_3538527(line)





ΣΤΟΙΧΕΙΑ ΠΕΛΑΤΗ /

ΟΝΟΜΑ / NAME

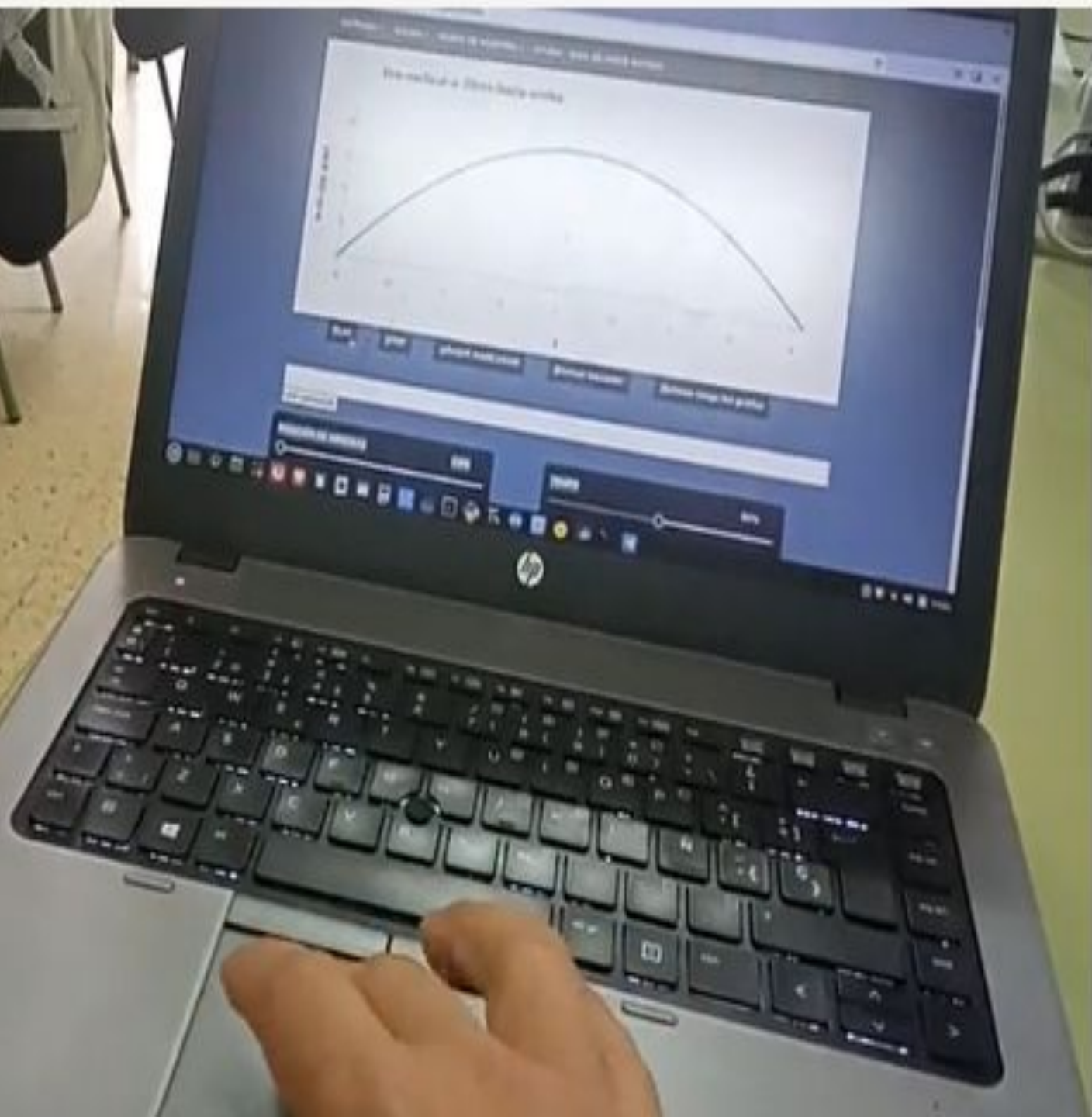
ΔΕΙΤΕΡΟΝΟΜΟ / ADDRESS / ADDRESS

ΧΩΡΑ / CITY / COUNTRY

ΑΠ. ΕΠΙΧΕΙΡΗΣΕΩΣ / COMPANY No / ROOM No

ΕΠΩΝΥΜΟ









**REINFORCE**  
REsearch INfrastructures FOR Citizens in Europe

# Citizen-engagement strategy

Increasing Level of Engagement & Participation of Citizen Scientists in CS Projects

Level	Inform	Involve	Collaborate	Consult	Empower
Goal	Awareness	Interest & Motivation	Contribution	Co-creation	Recognition
Engagement Activities	Website / social media Newsletter Webinars Outreach activities of LRI (Online) Conference presentations	Vision-building Workshops Demonstrations of projects, Virtual Visits, Community Building activities	Practice-Reflection Workshops Training (on subject & project) Forum / Discussions Community Building activities	Summative Workshops and Focus Groups	Contests / Competitions Educational resources Conference publications
Citizens Tasks, Roles and Contributions	Citizens are being informed about the research needs, intentions, goals, and foreseen activities.  They will understand how they can assist researchers to achieve them.	Citizens work with scientists to ensure that their needs, ideas, concerns, and aspirations are consistently understood and integrated in the project design and activities.	Citizens implement and contribute to the CS project.  They are keeping direct contact and discuss observations directly with researchers and other citizen scientists.	Citizens can provide feedback, share their initial ideas, or concerns on the citizen science project design and activities.	Citizens are being assisted by scientists in making use of the CS activities to inform others, train citizens in scientific skills, or in conducting their own research.
Researchers Tasks and Roles	Researchers inform the general public.  Various target groups will be contacted and informed separately and according to their perceived interests.	Researchers ensure that citizens ideas, concerns, motivations are directly reflected in the project design.  They are providing feedback on how input influences CS project design and activities.	Researchers collect contributions and incorporate findings, observations, and comments into their research work.  They provide ongoing feedback to the citizens and acknowledge their work.	Researchers start a dialogue, acknowledge the shared ideas and concerns, needs and motivations of citizens.  They explain the benefits of becoming involved and what contributions citizen scientists can make to the research work	Researchers provide resources, advice, and assistance to support citizens further utilize CS projects, to create new research-related activities, implement trainings, or conduct own research.





**REINFORCE**  
REsearch INfrastructures FOR Citizens in Europe

# Inform...

## HOW TO HELP SCIENTISTS IN THE GRAVITATIONAL WAVE NOISE HUNT

### SPEAKERS

Chris Lintott - Zooniverse  
Stavros Katsanevas - EGO  
Massimiliano Razzano - University of Pisa  
Beatriz Garcia - CONICET  
Julia Casanueva - Virgo  
Francesca Spagnuolo - EGO  
Emmanuel Chaniotakis - EA

16 OCTOBER  
15:00 - 16:15 CEST

WEBINAR



**REINFORCE**  
REsearch INfrastructures FOR Citizens in Europe



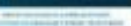
## Engaging Citizen Science

Aarhus University, April 25-26, 2022



## Open and Distance Education: New challenges and Perspectives

6-8 November | Ellinogermaniki Agogi, Athens



Workshop Bringing Citizen Science and Frontier Physics to the Classroom

## CITIZEN SCIENCE SDG CONFERENCE

14-15 October  
Berlin, Germany

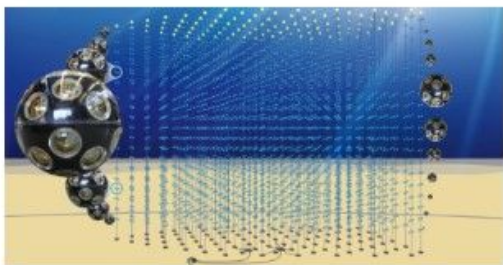
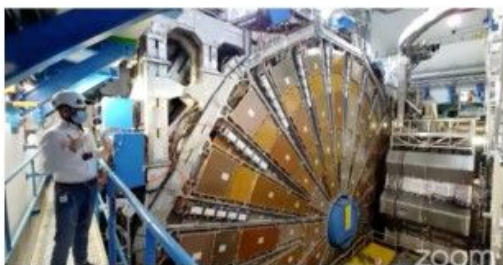






**REINFORCE**  
REsearch INFrastructures FOR Citizens in Europe

# Involve...



**REINFORCE**  
REsearch INFrastructures FOR Citizens in Europe

## International Training Course

Citizens Support the Optimization  
of Large Research Infrastructures in Physics

**PROGRAMME**  
July 10<sup>th</sup>- 15<sup>th</sup>, 2022  
Attica, Greece  
<https://indico.ea.gr/event/24/>

Organized by  
**ELLINOGERMANIKI AGOGI**





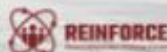


**REINFORCE**  
REsearch INFrastructures FOR Citizens in Europe

# Collaborate...

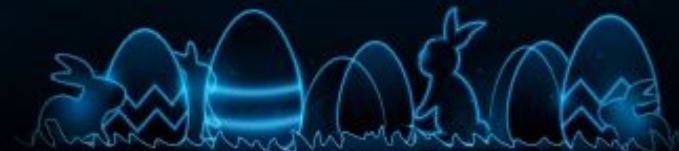


Join the Winter Challenge and Seize the chance to win one of the 4 scholarships for the REINFORCE International Training Course this Summer in Greece!



## REINFORCE Easter Challenge

March 29 - April 30 2022



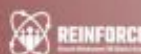
Join the Easter Challenge to support scientists in groundbreaking research in frontier Physics and get the chance to win one of the 5 scholarships for the REINFORCE International Training Course this July in Greece!



## Θερινός Διαγωνισμός για εκπαιδευτικούς

25 Μαΐου - 15 Ιουνίου 2022

Βοηθήστε τους ερευνητές να βελτιστοποιήσουν μεγάλες ερευνητικές υποδομές της Φυσικής και κερδίστε μια από τις 8 υποτροφίες για το θερινό σχολείο REINFORCE αυτόν τον Ιούλιο!



## EPS Citizen Science Competition 2022

1st - 30 September 2022



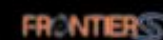
Help us support researchers in the fields of High Energy Physics and Gravitational Wave Astronomy to optimize their detectors and you will have a chance to win a trip to CERN or EGO-Virgo!



Surrounded  
by Science



ELLINOGERMANIKI AGORA



REINFORCE



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REsearch INFrastructures FOR Citizens in Europe

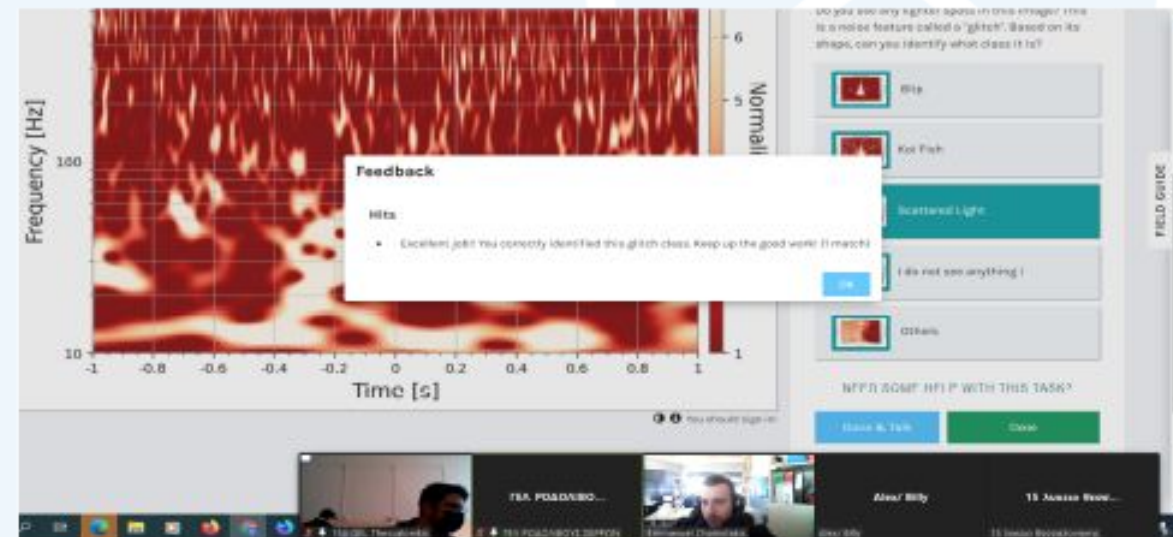
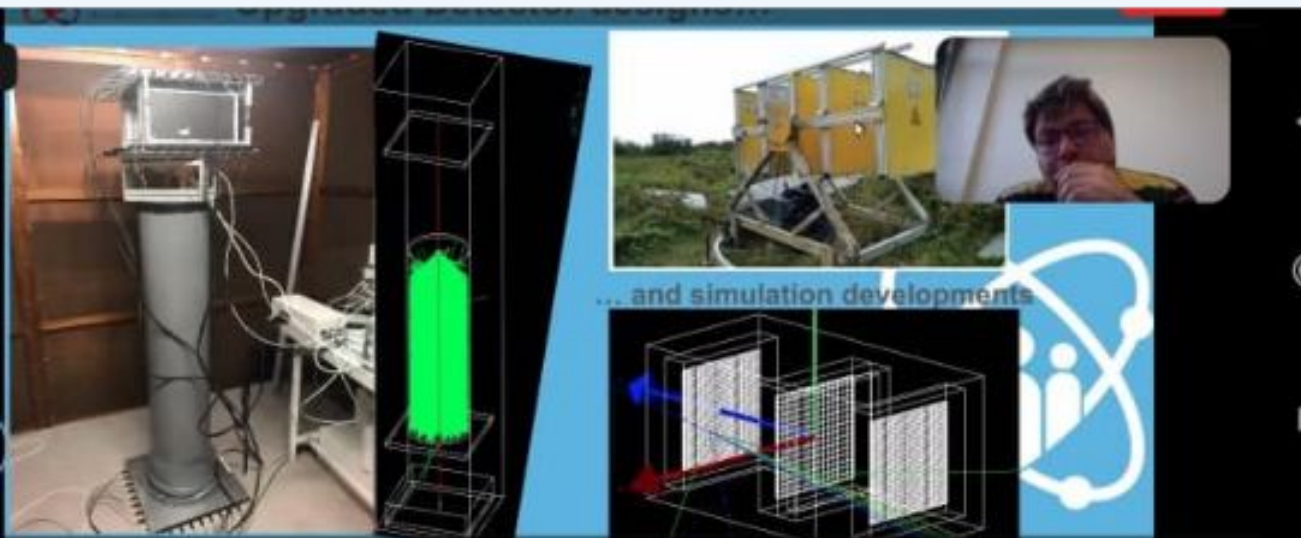
# Consult...



## VISION-BUILDING WORKSHOP ON CITIZEN SCIENCE

21 JULY 10:00-12:30AM CEST

### What do you connect with "Citizen Science"?







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# Empower...

## New Particle Search at CERN Talk

[New Particle Search at CERN Talk](#) > [Chat](#) > [Introduce yourself here!](#)

Search or enter a tag

Introduce yourself here!

Page 1 of 1



Recently 000 000 000

This is a discussion for people new to this project to say hi, few things about themselves, and get to know the people already here.

A little about myself:

Hi, I am @Gassas10

I first started on the Zooniverse through a project Gravity Spy and since then, I've classified on several projects. Then, I landed on New Particle Search at CERN and after doing some stuff over here, was given the role of moderator.

I am absolutely awed at the technology at the Large Hadron Collider that makes every particle collision possible, not to mention the many discoveries found by it.

Currently classifying in stages 3b and 1 and sometimes in Stages 3a and 2, I find finding and marking displaced vertices and potential candidates of long-lived particles fun.

So, what about you then? Introduce yourself here!

Original 00 00 00 00

## New particle search at CERN - REINFORCE Demonstrator

"I found the Project very interesting and inspiring and I can say that it was challenging to gain an understanding of what I have to do and how, but during the classifications the process was very pleasant. In my opinion everyone can do science and every citizen can contribute in Science through these projects. I feel grateful for the opportunity that you gave me to be part of the New Particle Search at CERN team."



**Georgia Dragoutsou**  
Volunteer of the "New particle  
search at CERN" Demonstrator



**ZOONIVERSE**  
Participatory research

  
**Certificate of participation**  
HEREBY CERTIFIES THAT

**Name and Surname (Zooniverse Name)**

has contributed to the *New Particle Search at CERN* project by successfully completing more than 200 classifications in stage 1, with more than 50% success rate, and has promoted the role of citizen-science in the search for new physics.

Prof. Christine Kourkoumelis

Dr. Stylianos Angelidakis

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 **IASA**

 **HELLENIC REPUBLIC**  
National & Kapodistrian  
University of Athens

 **ΕΛΛΗΝΙΚΗ ΔΗΜΟΚΡΑΤΙΑ**  
ΕΘΝΙΚΟ ΚΑΠΟΔΙΣΤΡΙΑΝΟ ΠΑΝΕΠΙΣΤΗΜΙΟ ΑΘΗΝΩΝ

 Grant Agreement no. 872859



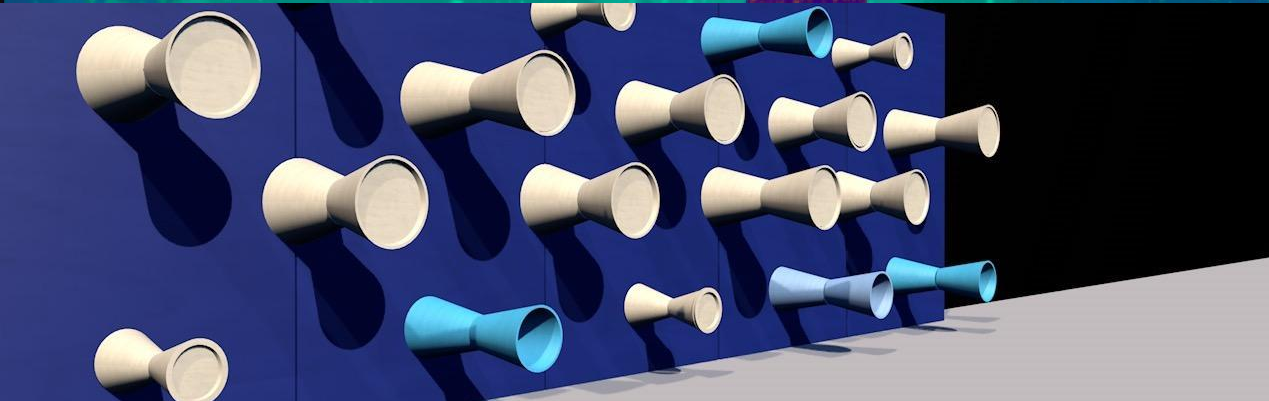
# REINFORCE

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## Critical and Scientific Thinking: The Big Ideas of Science

REINFORCE courses on Critical and Scientific Thinking aim to help people to become better thinkers and to be able to distinguish between pathological science, pseudo-science, fraudulent science, poorly-done science and good science.





BRIGHT  
20 NIGHT





# International Youth **ART & Science** Contest





In recent years, a large network of observatories has been deployed on remote places in the land, in the sea, underground and in space, to detect the signals coming from the "visible" Universe and even earlier, in the first moments beyond the "recombination wall" when nuclei and electrons formed neutral atoms and the Universe became transparent.

LISTENING TO NEW  
COSMIC MESSENGERS

NOFEGO

AMERICAN

APPEC

EUROPEAN

# International Youth **ART & Science** Contest





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06  
OCT  
2021

### Classical particle physics

Giancarlo Cella, Pisa University

- ☒ The concept of space and time, in Galileo, Descartes and Newton
- ☒ The concept of particle trajectory, mass, speed, acceleration Laws of Newton, the movement of the planets

08  
OCT  
2021

### Particles & waves in the XX century

Massimiliano Razzano, Pisa University

- ☒ Einstein special relativity,  $E=mc^2$
- ☒ Quanta, particle-wave duality,  $E=h\nu$ , Heisenberg principle, particle and antiparticles
- ☒ Cosmic ray physics
- ☒ Subnuclear forces, radioactivity, quantum field theory
- ☒ Nuclear and particle reactions, why they produce energy
- ☒ The forces and particles zoo

10  
NOV  
2021

### Waves: concept and detection

Giancarlo Cella, Pisa University

- ☒ The concept of wave in Huguens, amplitude, frequency, interference
- ☒ Electromagnetic theory and waves, aether
- ☒ Their detection with the Michelson and Morley interferometer

03  
DEC  
2022

### The cosmology of the visible universe

Stavros Katsanevas, EGO

- ☒ Formation and evolution of white dwarf stars, black holes and neutron stars
- ☒ Formation and evolution of galaxies, their redshift
- ☒ Formation and evolution of particles, primordial cosmology

09  
MAR  
2022

### Citizen Science: from theory to practice

Francesco Di Renzo, Pisa University

- ☒ The REINFORCE project
- ☒ Search for glitches: tools and methods
- ☒ Hands-on activity on Zooniverse

06  
APR  
2022

### General relativity

Valerio Boschi, National Institute for Nuclear Physics

- ☒ New concept of spacetime, GW equations, effects, ways of detection, LIGO and Virgo, sources of noise
- ☒ Sources of Noise, analyses of waves, glitches, FFT etc
- ☒ What have we discovered up to now

29  
APR  
2022

### Brainstorming and resolution of technical problems

Gary Hemming, EGO

- ☒ Brainstorming with REINFORCE technical manager

06  
MAY  
2022

### The sonification of gravitational waves

Francesco Di Renzo, Pisa University

- ☒ The sonification of gravitational waves
- ☒ Sonification tools and goals in REINFORCE

11  
MAY  
2022

### Art & Science

Stavros Katsanevas, EGO

- ☒ Art & Science in REINFORCE
- ☒ Concept, techniques and representation of the nature of space and time
- ☒ The role of humans as observers and actors

18  
MAY  
2022

### VISIT to EGO and the VIRGO interferometer

Gary Hemming, EGO

- ☒ Visit to the EGO site
- ☒ Visit to the VIRGO interferometer

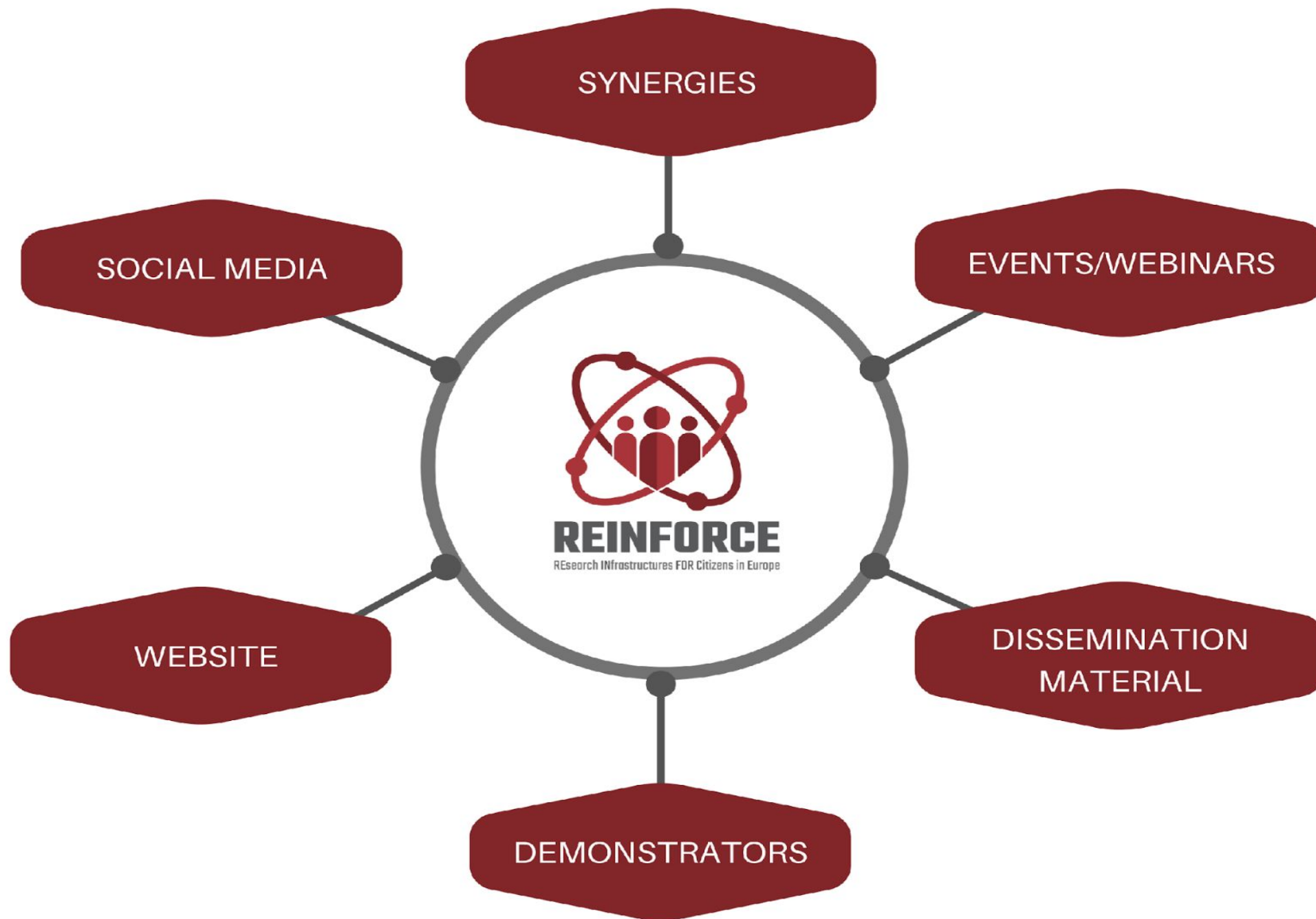
Course Programme:

# “ Physics for Senior Citizen Scientists ”

2021/2022

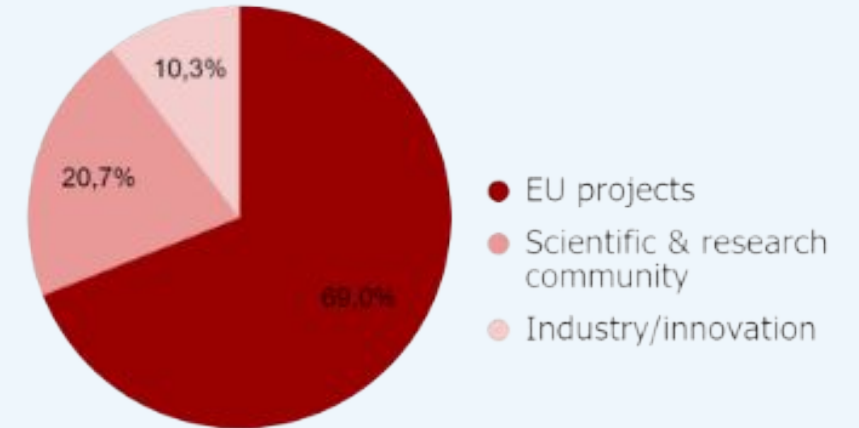








**32 active collaborations with relevant stakeholders**



eu-citizen.science



InSPIRES



Vetenskap & Allmänhet

*Strong partnerships with H2020 projects and research communities have led to increase the visibility of the project on external communities.*

*+140 Stakeholders reached out in conjunction with the release or promotion of major events or projects' outputs*



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ReinforceEU @ReinforceEU · Apr 26

.@ReinforceEU attended the "Engaging Citizen Science Conference" at @AarhusUni with a dedicated Workshop to show how the project can boost #scientific literacy amongst citizens & how an Inclusive-design approach can better engage citizens! #CitizenScience  
[reinforceeu.eu/demonstrators](https://reinforceeu.eu/demonstrators)



OeAD Citizen Science and 9 others



5



14



ReinforceEU @ReinforceEU · Jul 13

Some pics from an exciting Day 2 at @ReinforceEU Summer School jumping from #GravitationalWaves, through virtual visits of the @ego\_virgo GW Detector & hands-on activities on #Muon tomography and #Cosmic Rays

Stay tuned for more updates!  
[reinforceeu.eu/international-...](https://reinforceeu.eu/international-...)



INFN and 9 others



2



12



ReinforceEU @ReinforceEU · Jul 8

Get ready for the 2022 @ReinforceEU International Training Course that will take place next week! 📅  
Check out the programme in the attached photos!  
For extra info, don't hesitate to visit the International Training Course Website 🌐

[reinforceeu.eu/international-...](https://reinforceeu.eu/international-...)



EBRA - European School Innovation Academy and 9 others



2



4



**Exhaustive coverage of Reinforce's events  
(ICHEP 2022, International Summer Training  
Course, "Astronomy Beyond the Common  
sense" Workshop, "Engaging Citizen Science"  
Conference 2022**





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# High-Level Roundtable and Interactive Workshop

Opening Research Infrastructures  
How citizens can play an active role in the advance of  
ground-breaking research?



**Claudia  
Fabó Cortas**

Project Officer of ECSA  
European Citizen  
Science Association



**Emmanuel  
Tsismelis**

Senior Physicist,  
Head of Relations  
with Associate  
Members &  
Non-Member States  
(CERN)



**Marina  
Manzoni**

Policy Officer at  
European Commission



**Stavros  
Katsanevas**

REINFORCE Project  
Coordinator



**Francesco  
Mureddu**

Director at The Lisbon  
Council

**24th March 2022  
15:00 - 16:30 CET**



**REINFORCE**  
REsearch INFrastructures FOR Citizens in Europe

## High-Level Roundtable and Interactive Workshop

Opening Research Infrastructures  
How citizens can play an active role in the advance of  
ground-breaking research?



**Marina Manzoni**  
Policy Officer at European  
Commission

## High-Level Roundtable and Interactive Workshop

Opening Research Infrastructures  
How citizens can play an active role in the advance of  
ground-breaking research?



**Emmanuel Tsismelis**  
Senior Physicist, Head of  
Relations with Associate  
Members & Non-Member States  
(CERN)

**24th March 2022  
15:00 - 16:30 CET**



- Esteemed guests from CERN, ECSA and a Policy Officer from the JRC EC (Marina Manzoni)
- 59 engaged attendees spanning from policy makers, education-policy-experts, think tankers and academics, RRI reps

Webpage & recording:

<https://www.reinforceeu.eu/events/webinars/research-infrastructures-citizen-science>



## RICERCA E INNOVAZIONE

## Per gli scienziati cittadini di Ego

# Neutrini tra luci e suoni del

## **Uccelle nel Mediterraneo, distinguendole tra i**



**Reinforce**

11 ottobre 2020 · 🌐

BBC The Sky at Night's episode "Beyond the Visible" is about to start! Don't miss the opportunity to meet remarkable, vision-impaired astronomers who are pioneering ways to research using their senses, such as Wanda Diaz-Merced, contributing also in the REINFORCE project.



BBC.CO.UK

**BBC Four - The Sky at Night, Beyond the Visible**

How vision-impaired astronomers are able to see the universe.



## Five schools on a virtual visit to CERN and IceCube

The ATLAS and CMS experiments, together with the IceCube Experiment in the South Pole, hosted a virtual visit for high-school students

23 OCTOBER, 2014 | By Abha Eli Phooob



### Related Articles



Bringing CMS to South Korea



The CMS experiment at the LHC



The CMS experiment at the LHC

### SPEAKERS

Chris Lintott - Zooniverse

Stavros Katsanevas - EGO

Massimiliano Razzano - University of Pisa

Beatriz Garcia - CONICET

Julia Casanueva - Virgo

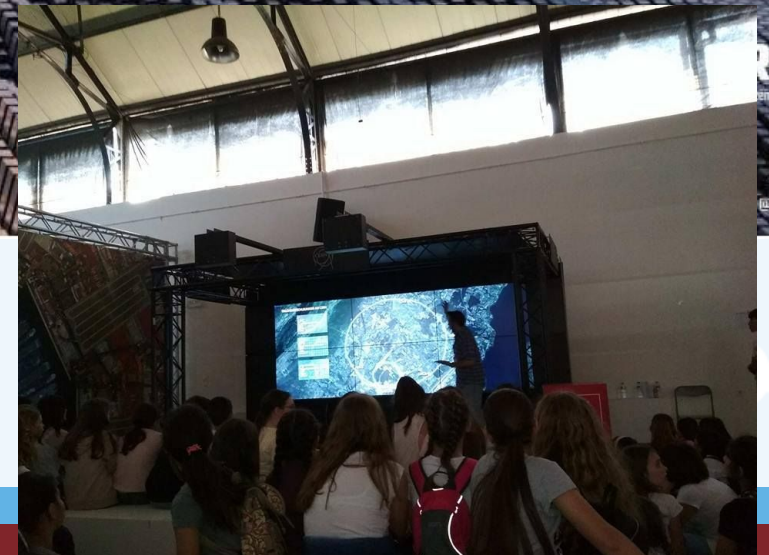
Francesca Spagnuolo - EGO

Emmanuel Chaniotakis - EA

## HOW TO HELP SCIENTISTS IN THE GRAVITATIONAL WAVE NOISE HUNT

16 OCTOBER  
15:00 - 16:15 CEST

WEBINAR



REINFORCE



@ReinforceEU

## Reinforce evaluation instruments

### initial acquisition

Event monitoring sheet



Feedback survey for  
events (f2f and online)



### continuous involvement

Access Zooniverse Data



Zooniverse  
experience survey



Online survey  
pre and post questionnaire



### sustainability

Self-assessment  
with demonstrators





**CITIZEN SCIENCE  
EVALUATION FRAMEWORK**

**PROCESS & FEASIBILITY**

**OUTCOME & IMPACT**

**SCIENTIFIC  
DIMENSION**

Scientific objectives  
Data & systems  
Evaluation & adaptation  
Cooperation & synergies

Scientific knowledge & publications  
New research fields & structures  
New knowledge resources

**CITIZEN SCIENCE  
DIMENSION**

Target group alignment  
Degree of involvement  
Facilitation & communication  
Cooperation & synergies

Knowledge & attitudes  
Behaviour & ownership  
Motivation & engagement

**SOCIO-ECOLOGICAL  
DIMENSION**

Dissemination & communication  
Target group alignment  
Active involvement  
Cooperation & synergies

Societal impact  
Ecological impact  
Wider innovation potential

# Interactive Workshop

## “Fostering citizens’ role in the advance of ground-breaking research in theoretical physics”

**1-2 September 2022**  
**10:00 – 17:00 CEST**



**hybrid EGO  
and ZOOM**



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## Join the community



[Reinforceeu.eu](https://Reinforceeu.eu)



[/company/reinforceeu](https://www.linkedin.com/company/reinforceeu)



[@ReinforceEU](https://twitter.com/ReinforceEU)

