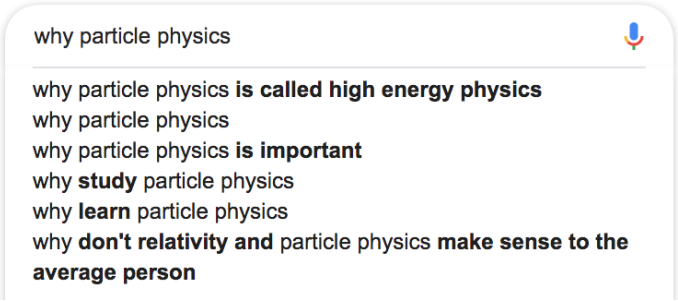
Education communication and outreach; it's essential



Perrine Royole-Degieux
CNRS/IN2P3, France
on behalf of the European Particle Physics Communication Network

One common goal:
Sustain long-term future of the field

Inspire
Educate
Collaborate
Secure support

The ECOsystem

Professional educators

Help acquire knowledge, competence and confidence. Contribute to education research. Our gateway to the future.

Professional communicators

Advise management. Plan strategically. Help make good use of already existing channels. Monitor upcoming opportunities.

Scientists

Produce science. May be outreachers, teachers. Sometimes engage with decision makers and society.

→ Coordinated work of all actors is crucial

BEH boson discovery: a case study

Media relations

WHO

press officers and communicator networks with the collaboration of scientists

WHAT

press visits, statements and press releases (start-up, HE collisions), media events, media files, media training for scientists

Public engagement

WHO

Outreachers and communicators

WHAT

Talks and debates, websites, exhibitions in museums, planetaria and public spaces, books, participation in science (and non-science) festivals, social media, events around movie release, Physics Slams, *my thesis in x minutes*, lab visits, open days, Researchers' Night...

Educational programmes

WHO

educators with outreach networks and communicators

WHAT

teacher workshops, masterclasses, detectors in the lab, school labs, school visits, student internships, hands-on experiments for the classroom, particle physics schools...

Corporate communication and political engagement

WHO

communicators in coordination with institute, lab and university management, protocol office and CERN Council delegates, influential scientists, politicians...

WHAT

Websites, social media, leaflets about country participation to CERN, VIP visits, annual report, impact reports editorials in newspapers, membership of Scientific Advisory Councils...

The power of professional networks

IPPOG

International Particle Physics Outreach Group. EPPOG since 1997. Collaboration since 2016

EPPCN

European Particle Physics Communication network Since 2006

Interactions

Communicators from world's particle physics laboratories Since 2001

Networks are key for best coordination and consistent delivery of messages :

- Run multinational campaigns while acknowledging national and local contributions
- Agree on press release protocol to speak in one voice
- Innovate locally and nationally sharing best practice

Higgs is the new fundamental state...

NATURE | NEWS FEATURE

Frontier experiments: Tough science

Five experiments as hard as finding the Higgs.

Nicola Jones

04 January 2012 | Clarified: 05 January 2012

Picturing a supermassive black hole

The long-awaited announcement was made simultaneously at multiple news conferences around the world by scientists participating in the Event Horizon Telescope project. The scale of the event was reminiscent of the announcements surrounding the discovery of the Higgs boson and the first detection of gravitational waves.

gravitational waves

This detection is indeed a big deal: one of the great discoveries of the decade - up there with thedetection of the Higgs particle, which caused huge razzmatazz two years ago.

Lindau Nobel Laureate Meetings a retweeté

Abdulrahman Abotaleb @abdoabotalib · 15 avr.

7 years ago, I was in #Lindau surrounded by hundreds of researches and +60 Nobel-Prized scientists watching the press conference that announced remarkable discovery; **Higgs** boson. I completely retrieved those unforgettable moments when I was watching the #BlackHole image revealing

Traduire le Tweet

1 8

After the discovery:

building on reputation - capitalising - enlarging audience

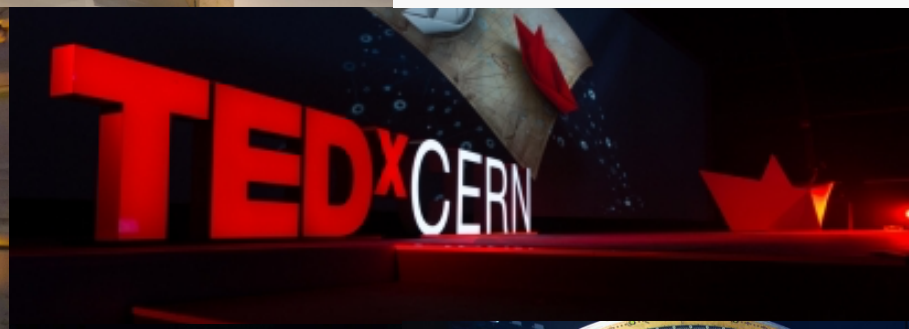
Masterclasses with real Higgs data (since 2013)
European strategy update (2013)
CERN 60th anniversary (2014)
Beam Line for School (2014)
High School Students Internship Programme (2017)
Teacher programmes
Open Days at CERN and European labs
Travelling exhibitions
Collider exhibition
Public event during HEP conferences
Dark Matter Day (since 2017)
HL-LHC media event (2018)
and soon: CERN Science Gateway (2022)
...


GERMANY


UK


SPAIN

FRANCE



PORTUGAL


ITALY


CERN

Lessons learned

Plan!

Prioritise

Provide training

Engage early

Measure impact and outcomes

Coordinate and share best practice

New challenges

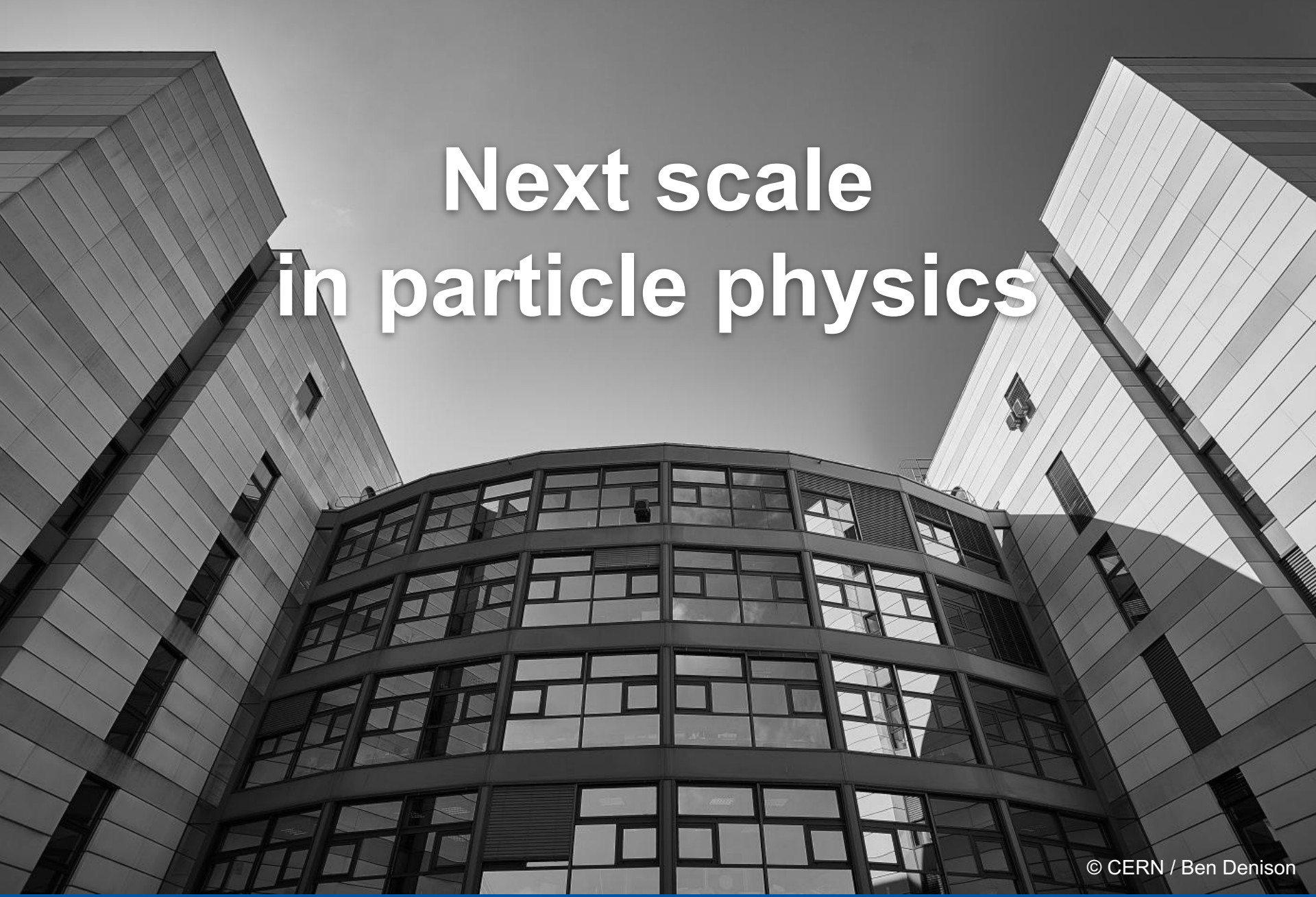
Science funding

- We compete for public attention and funding with other fields of science
- Our proposals are infrequent but seen as highly expensive when proposed

Communications tools

- New formats emerge, field is quickly evolving
- Harder to keep control of a news story (social media radically changed the way we interact with audiences)

Next scale in particle physics



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Perrine Royole-Degieux
EPPCN co-chair and CNRS/IN2P3
15 May 2019, Granada, Spain

Gain support from wider audiences

- Most of the cases we reach out to an already convinced audience
- Strong sceptics challenge our communication skills

- How to collaborate with other discipline ECO groups in neighbouring fields and beyond?
- How to encourage science journalism?


Netzwerk eilchenwelt

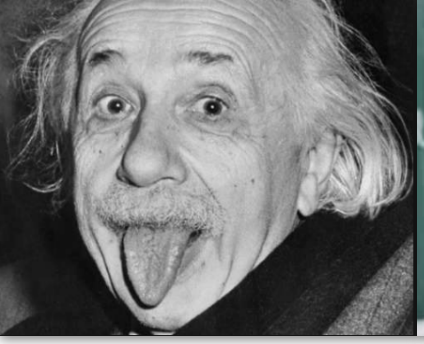
Education is key

Educate:

in particle physics (next generation of physicists)

in scientific methods and to critical thinking (future citizens)

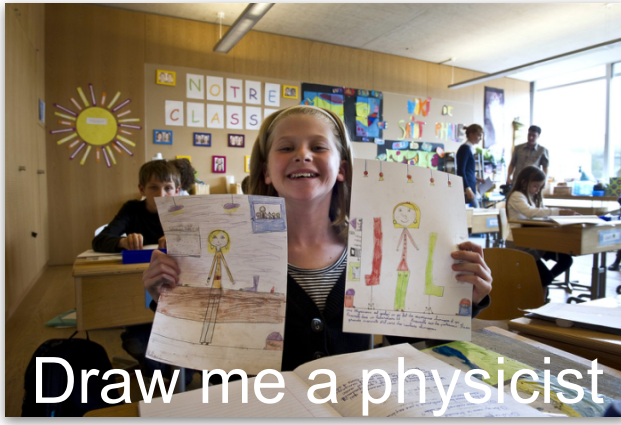
- How to make them enter school curriculum?
- How to improve science teaching methods?
- How to maximise impact of educational programmes?



What does a physicist look like?

Representation counts

Efforts have already been made, although there is a significant lack of diversity in our field.



Demonstrate impact

We need to demonstrate economic, social and environmental impacts of our research, using appropriate metrics.

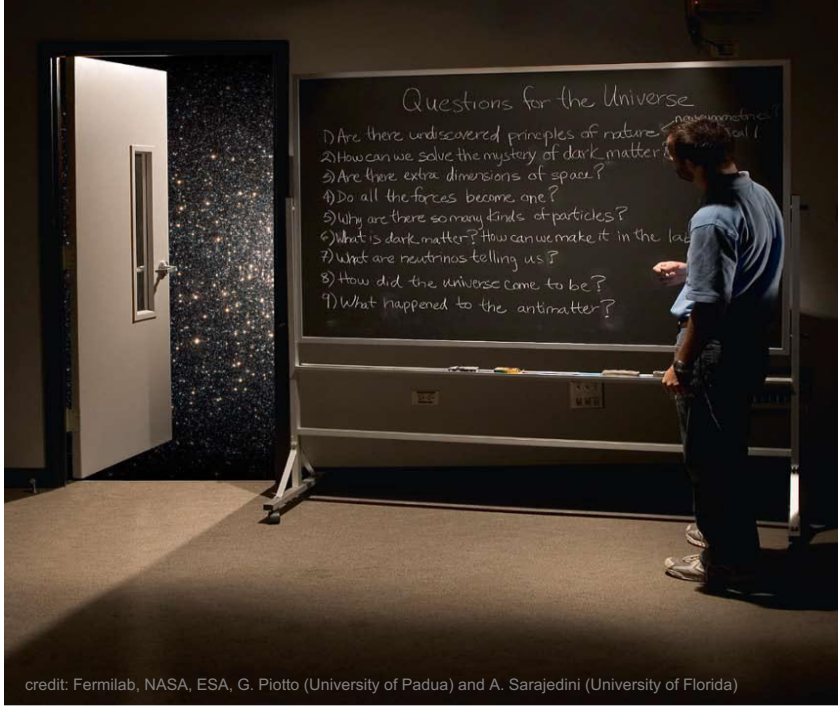
How to generate support form third-party advocates for our field (and its impact on society)?

Coordination of ECO at all levels

Public support needed at regional, national, and international level.

Yet ECO resources are unequal across European countries and beyond.

Shall we agree on a minimum human and financial resource to dedicate to ECO, nationally?



New narrative needed

How to facilitate better collaboration between scientists, outreachers and communicators ?

Perrine Royole-Degieux
EPPCN co-chair and CNRS/IN2P3
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Supersymmetry cakes ©Katy Grimm

The perfect recipe

Write **compelling case** for particle physics

\+ Develop **accurate and transparent** story

\+ Fine tune and prioritise **messages** for each audience

\+ **Train** the next generation of scientists

Let's be ambitious

We're aiming at a new scale
in fundamental physics.

In view of realising this ambitious plan, education, communication and outreach are key strategic pillars for our field.

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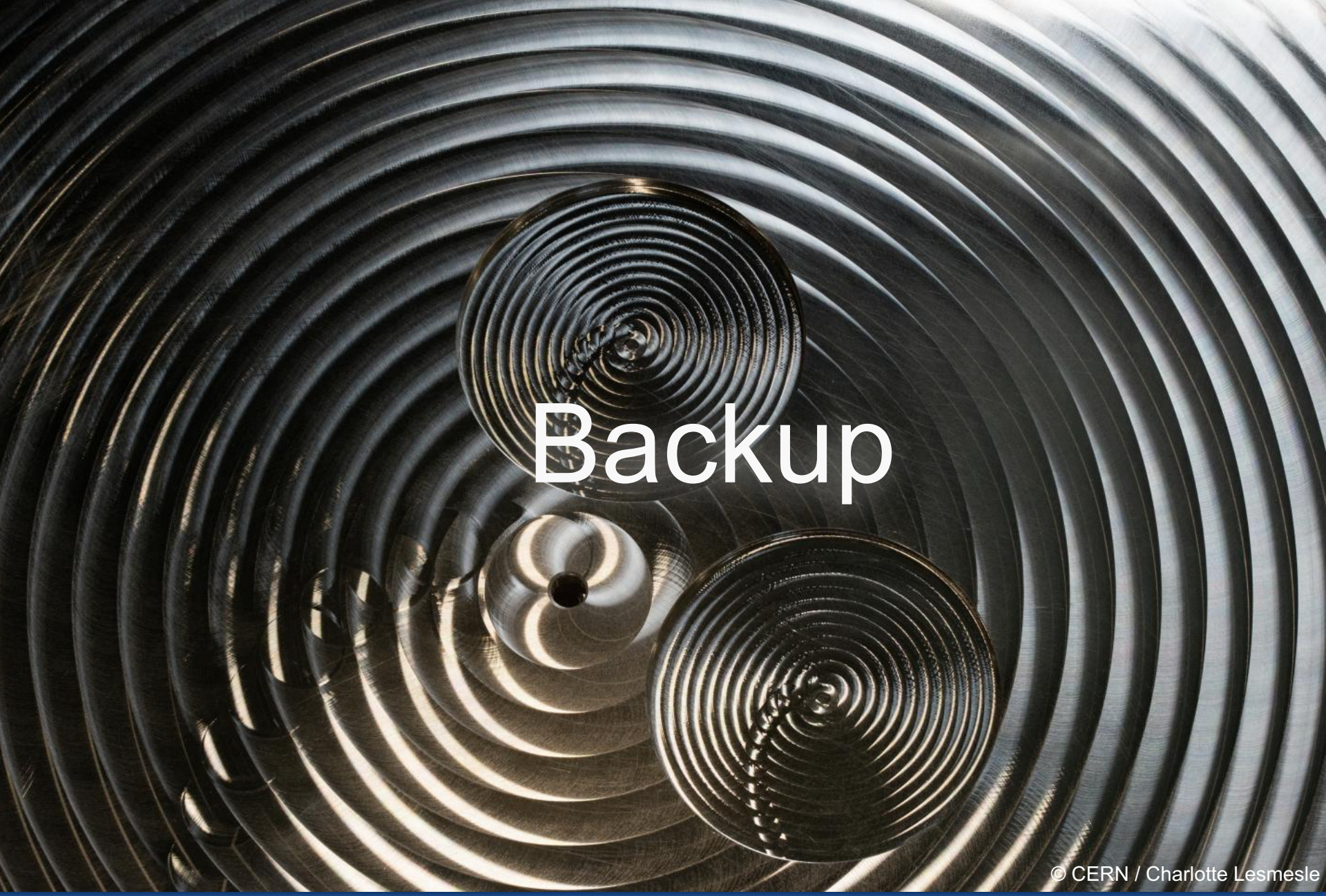
Thanks to EPPCN, IPPOG and interactions members and CERN communication team for their input.


Backup
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Particle physics communication networks

INTERACTIONS.ORG
PARTICLE PHYSICS NEWS AND RESOURCES

Global network of leading communicators from the major particle physics laboratories

http://interactions.org/

Photowalk, Dark Matter Day, Peer Reviews, Particle people blog, press releases and coordination of global campaigns

Reports to ICFA

European Particle Physics Communication Network

Communications officers in the Member States with delegated authority to represent the communications activities of the Particle Physics community in their country.

https://espace.cern.ch/EPPCN-site

Reports to CERN Council

Social Media

are professional and efficient tools to:

- **share stories** (live)
- join a **conversation**
- **monitor** science news and audience
- talk to **journalists** and **decision makers**
- evaluate the **impact** of your actions
- **engage** new type of audiences and influencers
- maintain **reputation**

Reactivity is key.

#ESPPUpdate

CERN On Social Media

2012–2016

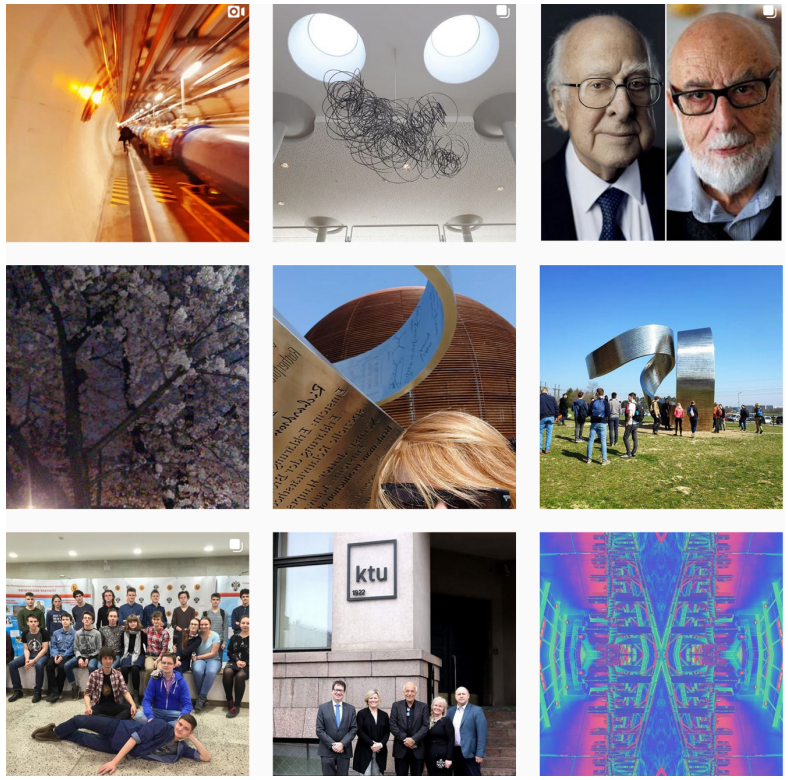
CERN gains a **new** social-media follower **every 2 minutes**!
Communicating science through social media → reach **many different audiences in different countries**.

What really matters on social media?

It's more than the numbers:

- Creating different types of content: news, facts, campaigns, human stories
- Using social-media features: lives, stories, photos, videos
- Adapting the tone: humour when it fits, professional when needed
- Collaborating with the scientific community
- Collaborating with influencers to reach new audiences
- Going deeper into the analytics to find out what people are saying about you

Social media provides a valuable contact with real people - it is a extension of real life.



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