

Sharing ATLAS Science

Communicating with the public

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9 July 2022

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CERN

why do education & outreach?

Inspire the **next generation** of scientists.

Gain essential **communication skills**.

Foster **scientific literacy**.

Combat the global pandemic of **mistrust in science**.

Encourage **support of basic research**.

... and have fun!

Public engagement, education and **communication** in particle physics should continue to be recognised as important components of the scientific activity.

European Particle Physics
Strategy Update 2020



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who we are



The outreach team **supports the collaboration** in communicating the goals and accomplishments of the ATLAS Collaboration to the public.

Who we are:

- Two ATLAS Outreach Coordinators elected by the Collaboration
- Core team for essential activities
- Several ATLAS members contributing to projects (key ones for OTP).

What we provide:

- **public communication content** about ATLAS research.
- develop **materials and tools** for the whole collaboration.
- support **direct engagement**.



Communication

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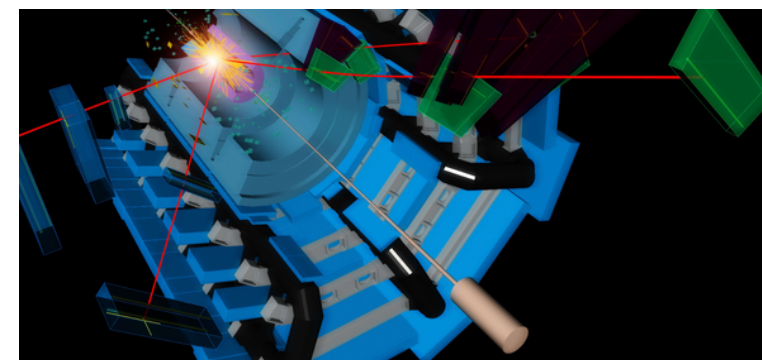
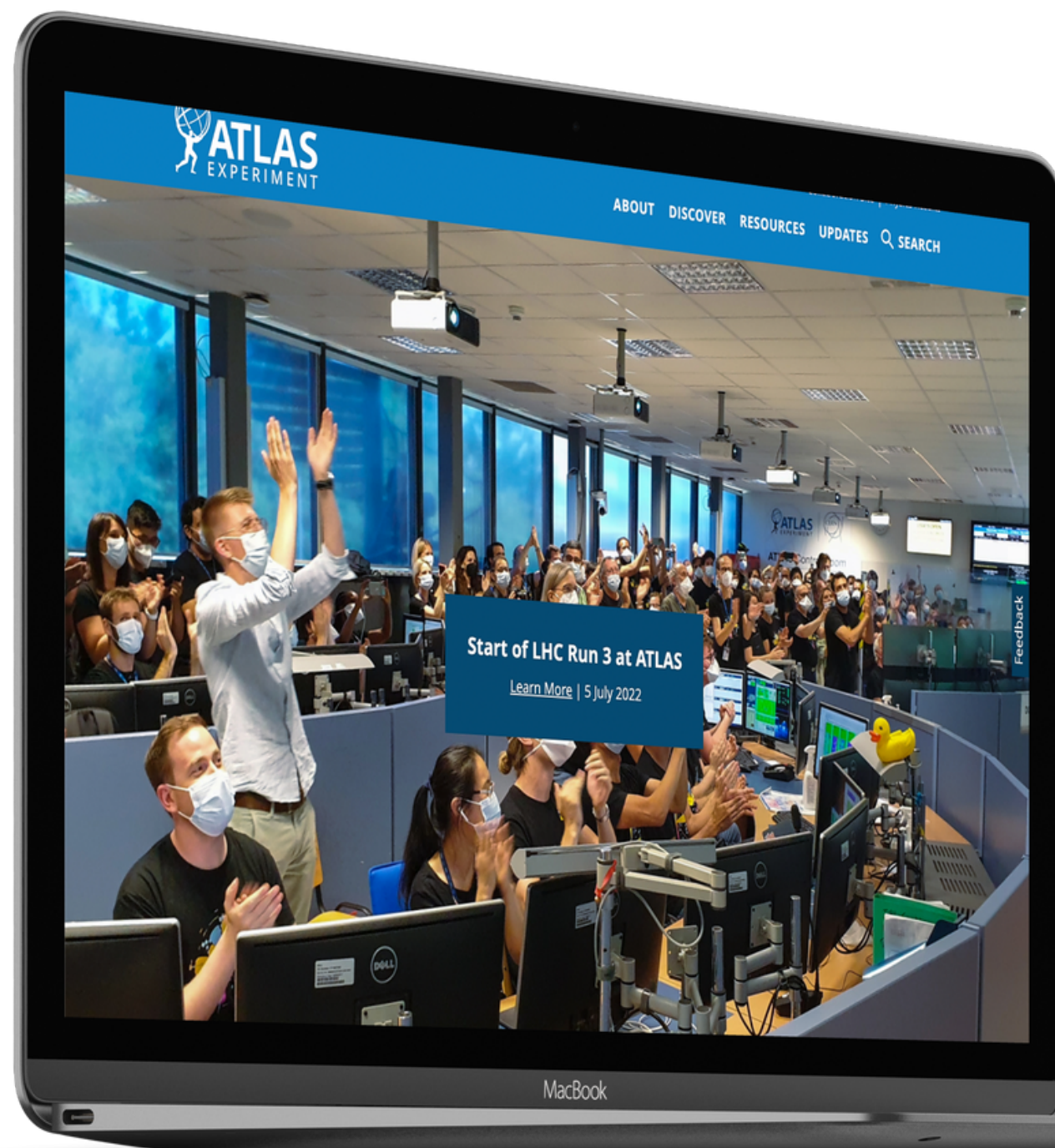
Creating Content

Main aim: to give public visibility to the ATLAS Collaboration, its goals, successes and members.

We take a diversified approach to reach (very) different audiences, tailoring content to multiple platforms.

The ATLAS public website remains the main hub for public content, with high quality, in-depth material in the form of **press statements** (since 2012), **news** (since 2008), **physics briefings** (since 2014), **features**, **portraits**, **blogs** and **evergreen content**.

Content is a collaborative effort with ATLAS members and communication experts. News/Statements pushed to Google News to ensure accurate messaging available to public.



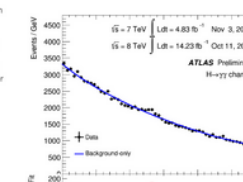
Updates > Press Statement > 10 years of discovery with the Higgs boson
Press Statement
10 years of discovery with the Higgs boson
4 July 2022 | By ATLAS Collaboration
4 July 2022, the ATLAS Collaboration at CERN has released its most comprehensive overview of the Higgs boson. The new paper, published in the journal *Nature*, comes exactly ten years after ATLAS announced the discovery of the Higgs boson. In celebration of this anniversary, a special all-day symposium on the Higgs boson is currently underway at CERN.



What is the Higgs boson and why does it matter?

Physicists describe particle interactions using the mathematics of quantum field theory, in which forces are carried by intermediate particles called bosons. Photons, for example, are bosons carrying the electromagnetic force. In 1964, the only mathematically consistent theory required bosons to be massless. Yet, experiments showed that the carriers of the weak nuclear interaction - the W and Z bosons - had large masses. To solve this problem, three teams of theorists: Robert Brout and François Englert; Peter Higgs; Gerald Guralnik, Carl Hagen, and Tom Kibble independently proposed a solution now referred to as the Brout-Englert-Higgs (BEH) mechanism.

The BEH mechanism requires the presence of a new field throughout the universe which gives mass to some of the bosons. Existence of this field could be verified by discovery of its associated particle - the Higgs boson. On 4 July 2012, the ATLAS and CMS experiments at CERN announced that they had independently observed a new particle in the mass region of



Discover > Detector > Long Shutdown 2

Upgrading the experiment for LHC Run 3

After several years of intense operation, the ATLAS Experiment entered its second maintenance period in December 2018 (called 'Long Shutdown 2' or LS2). Over the course of 3.5 years, members of the Collaboration installed critical upgrades to the experiment and carried out maintenance work on its systems. Significant upgrades were also made to the LHC and its [accelerator complex](#).

This incredibly productive period ran alongside continued analysis of LHC Run 2 data. Highlights of the activities carried out can be found below.

General LS2 resources:



Social Media

Key part of our communications – spreading our content to a broader and more diverse audience.

In addition to content on ATLAS website, we create content specifically tailored to social media:

- **social media videos**, including “elevator-pitch” physics videos (launched during COVID), and feature videos on specific physics results
- live events (next slide)
- **twitter threads**
- instagram content: multilingual **photo stories**, **quizzes**, musical **reels**, etc.



Twitter
(96.6k)



facebook
(38.3k)



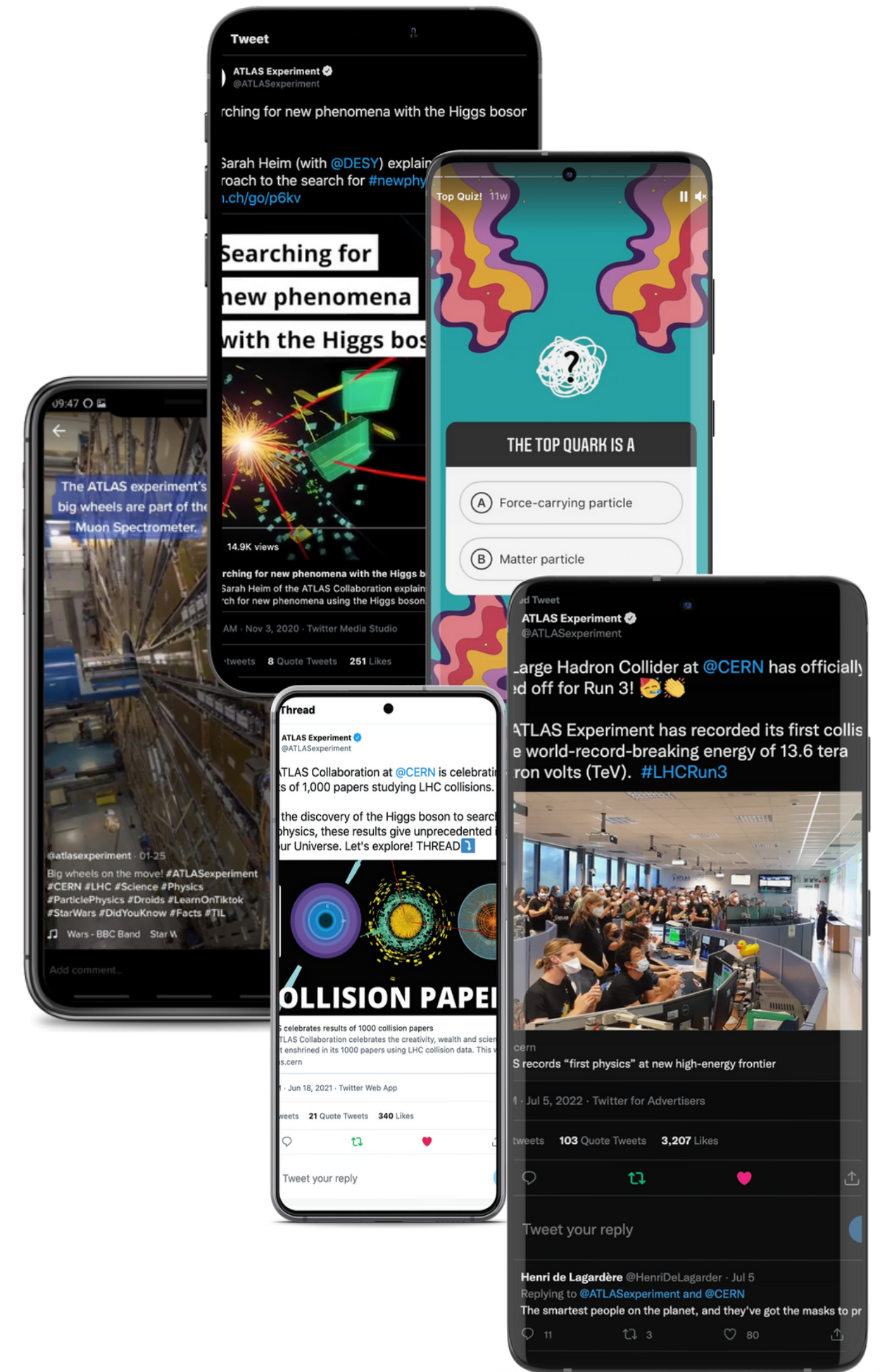
Tiktok
(2.7k)



Instagram
(47.9k)



Youtube
(8.43k)



Also on LinkedIn ([company](#) & [group](#) profiles) and [CERN Alumni](#) platform.

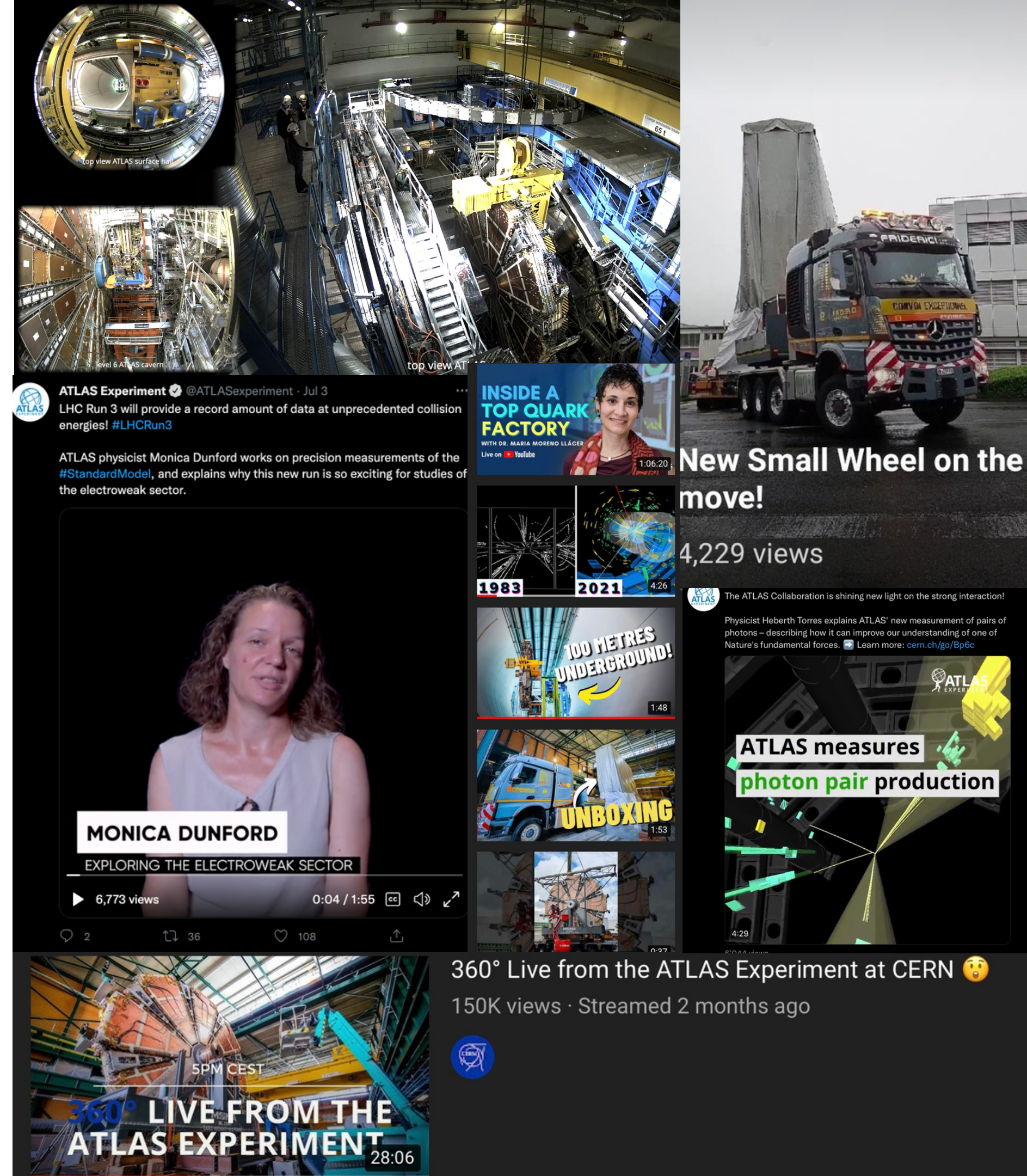
(Live) Video

Taking advantage of **algorithm push** for video content from creators. Live videos and events give our audience a change to **engage with us directly**.

Recent examples include the extensive coverage of the ATLAS new small wheel installation and transport:

- Youtube: 360 live event with CERN (160k views)
- Tiktok: Live stream of unwrapping
- instagram: Live coverage & Q&A of transport.
- multi-platform: 2 post-event Videos of unwrapping and descent.
- internal events: live stream of descent and connection during weekly to unwrapping.

Also: Youtube Live lecture series, Open Virtual Visits & participation in LHC Restart & Higgs10 Instagram live



Adapting science to social media

New strategies for COVID

In March 2020, we adopted a **completely new social media and content strategy**. Focus turned to sharing resources and multimedia, and providing solidarity during start of quarantine period.



Sharing the human side of ATLAS

Launched a social media campaign sharing short clips from ATLAS people working from home.

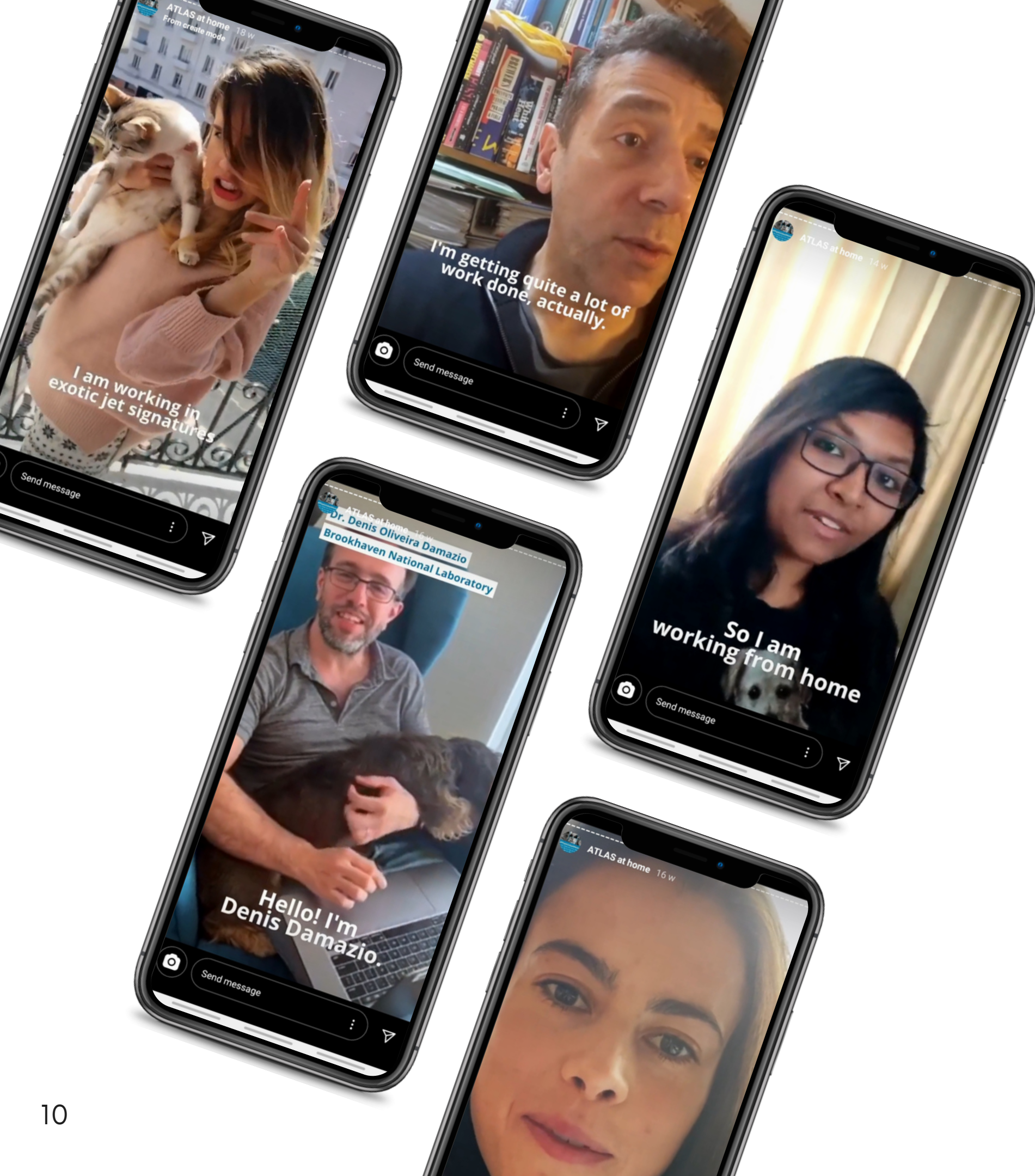
Members shared their experience & offered some solidarity during the start of the quarantine.

Format & Features

6 video compilations featuring:

- 22 ATLAS members,
- 2 canines
- 3 felines!

Videos adapted to fit vertical Instagram and square Twitter/Facebook.



Opportunity to promote educational material ideal for stay-at-home audiences.

For stay-at-home educators

Promoted educational material ideal for stay-at-home parents, teachers and students:

- ATLAS Colouring book (with new languages added during the campaign)
- #BYOPDatHome competition
- ATLAScraft (Minecraft)

For the bored-at-home

- Google Street View Tour of ATLAS
- 360 video ATLAS tour

For the working-from-home

- ATLAS Zoom backgrounds





Direct Engagement

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Virtual/Open Visits

Longstanding Outreach programme , connecting visitors to ATLAS scientists in the ATLAS control room or in the ATLAS Cavern ([click here](#) to learn more)

Key stats for 2021:

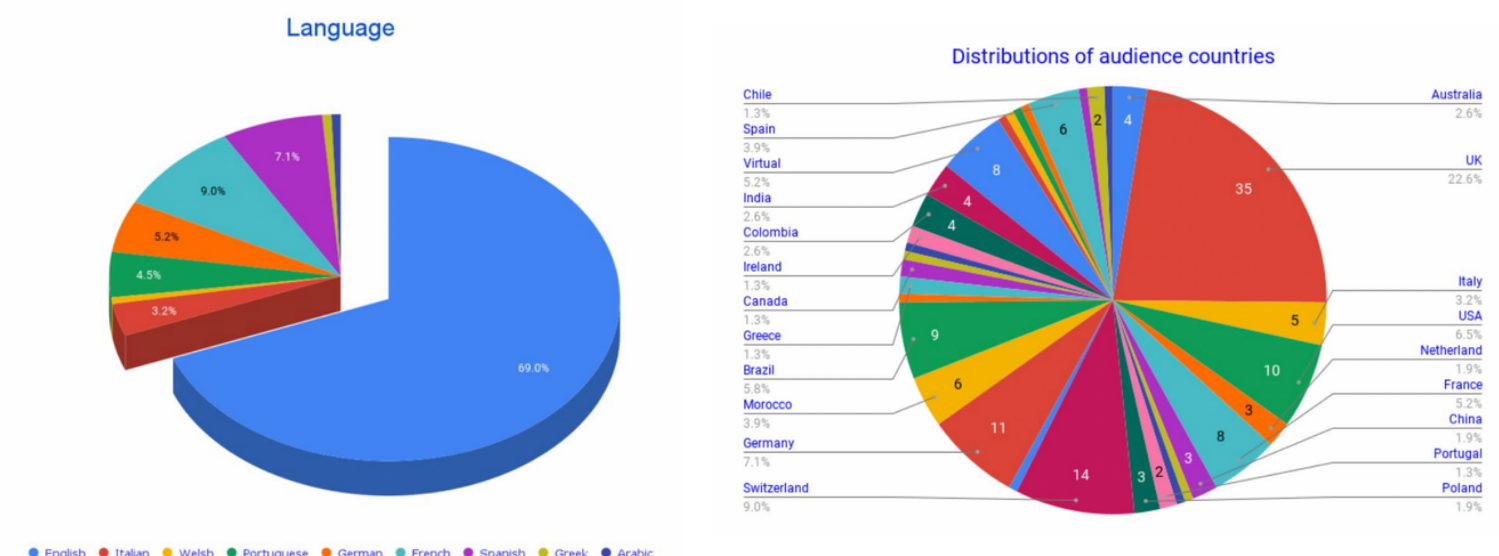
- 155 visits (152 from underground)
- Visits in 33 countries across every populated continent: from Australia to Venezuela!
- Groups range from 10 to 500 visitors, with highly diverse participants

In 2021, launched Open Visits for single visitors to join. 7 held in 2021 on zoom, 4 on Tiktok.

In 2022, ATLAS held its first Open Virtual Visit on Youtube - engaging directly with audience.



Map of participants in 2021 Virtual Visits (excluding Open Visits)



Visitor Centre

The ATLAS Visitor Centre, originally set up in 2011 was redesigned and reinstalled between 2018 and 2021, and has just **opened its doors to visitors again.**

It is one of the most-visited guided itineraries in the CERN Visit programme.

The exhibition was developed as a joint project between the ATLAS Collaboration and CERN, together with design company Point Prod (Geneva).



Internal Engagement

also critical...

Important part of visibility & support within the Collaboration and at CERN in general.

Organising events (Run3 startup in CERN B40), displays (Gingerbread village in CERN R1) & Exclusive Live Streams (NSW lowering).



open to questions!

Summary:

- Public communication initiatives require top-down support to maximise reach
- Social content continues to be very popular
- Adaptations to new formats & challenges have been successful, though of course demand additional resources!

Contact People:

outreach coordinators: Rebeca Gonzalez Suarez & Darren Price
comms/social media/colouring book: Katarina Anthony, virtual visits: Muhammad Alhroob, open data: Kate Shaw, fact sheets: Ana Maria Rodriguez, cheat sheets: Elise Le Boulicaut, Valerie Buxbaum, website: Steven Goldfarb, visitor centre: Steven Goldfarb, Sascha Mehlhase