

# ATLAS Virtual Visits

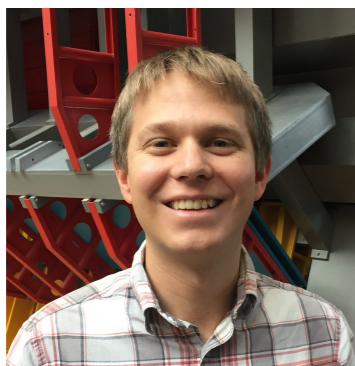
## Take part from anywhere in the world

On behalf of the ATLAS Collaboration

### ICHEP

July 28, 2020

<https://indi.to/grSyQ>



Ben Carlson



University of  
Pittsburgh





## 1. Introduction

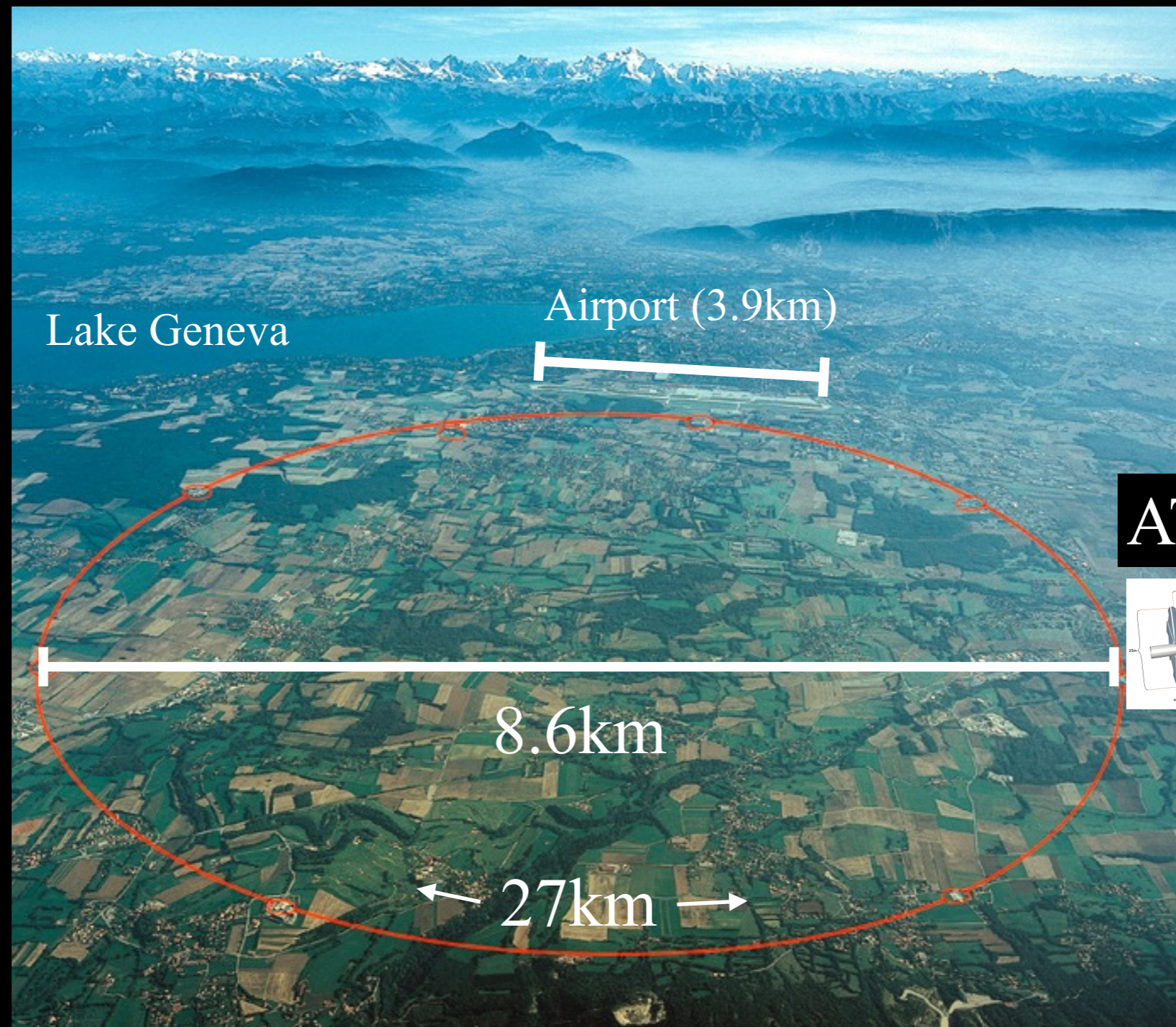
- ATLAS experiment
- ATLAS Collaboration

## 2. Virtual visits

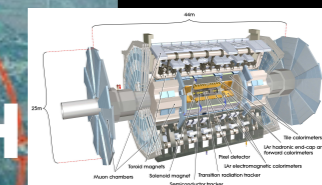
- What is a virtual visit
- Statistics of past participants
- How to book a visit



Highest energy particle accelerator in the world  
Collides protons with a center of mass energy of 13 TeV



ATLAS





# ATLAS experiment

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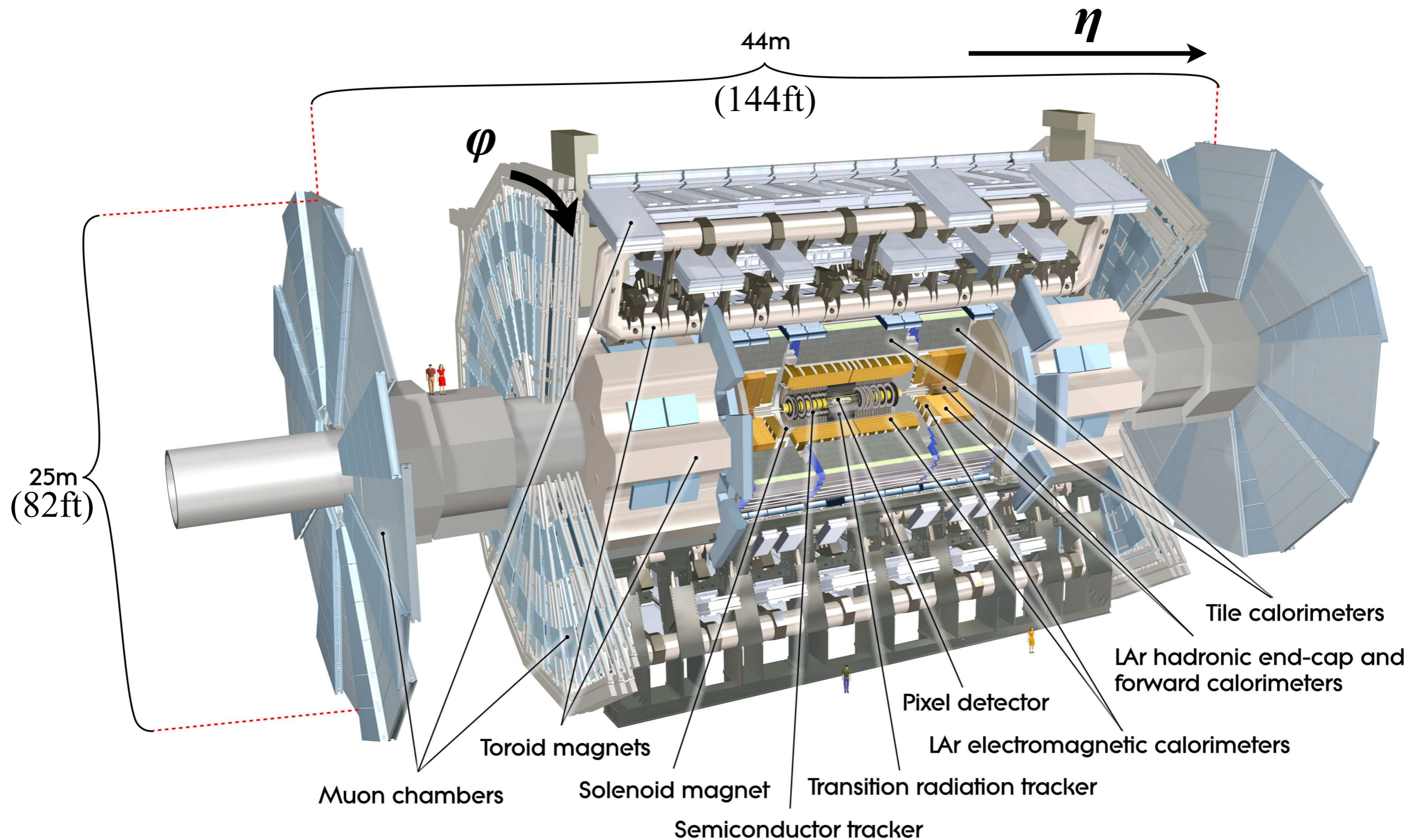
# ATLAS detector

Ben Carlson



2T solenoid, 4T toroid

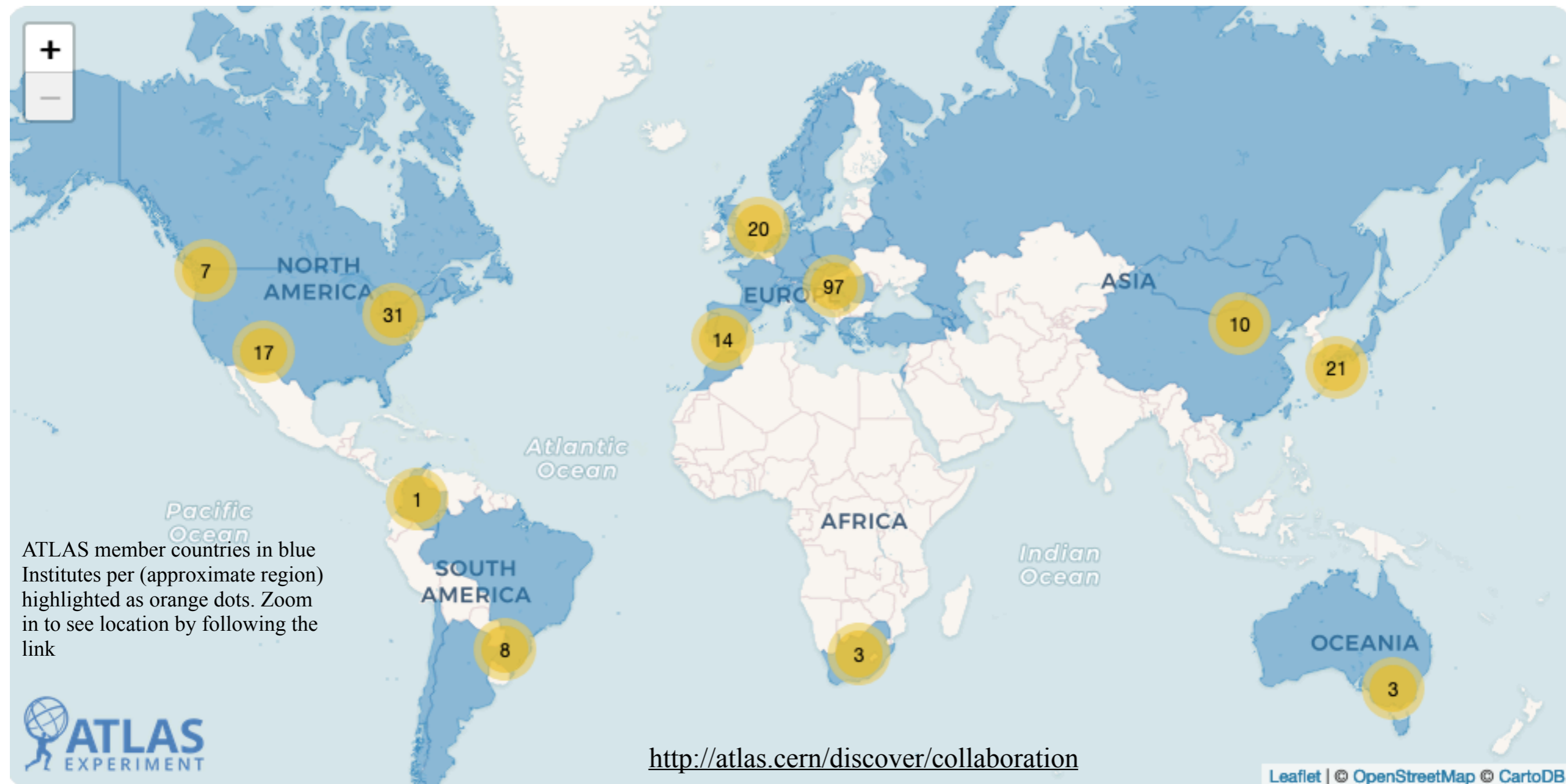
100M electronic channels for data readout







3000 authors from 183 institutes located in 38 countries



Globally connected... a chance to bring people from around the world  
to virtually see science in action @ CERN



# What is a virtual visit?

ATL-OREACH-SLIDE-2020-137  
ATLAS cavern image ([link](#))

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## How the visit happens

- Audience connects to the ATLAS control room via video conference software

## Introduction

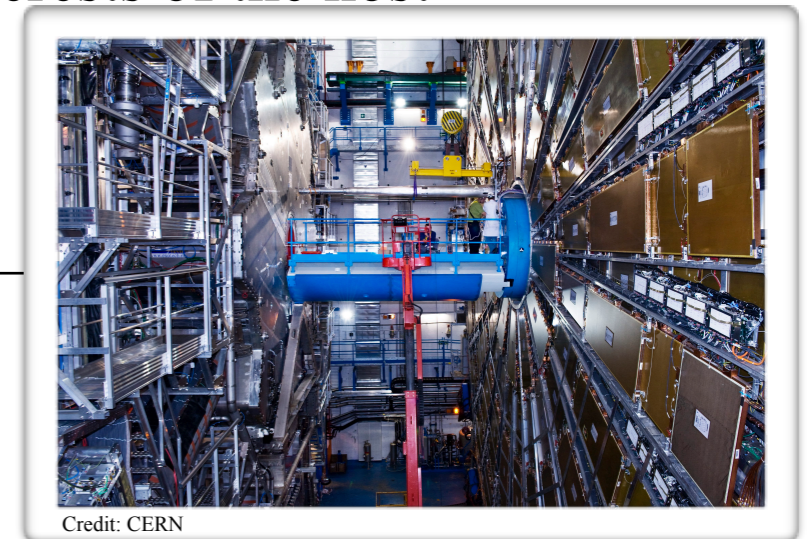
- Introduction to the guides
- Physics goals for the ATLAS experiment and (often) personal interests of the host

## Question and answer

- Detailed question and answer period with audience

## Virtual visit to **ATLAS cavern**

- When possible... the host goes to the ATLAS cavern



ATLAS control room



Virtual audience



# Scenes from visits

From promotional video ([link](#))

Ben Carlson



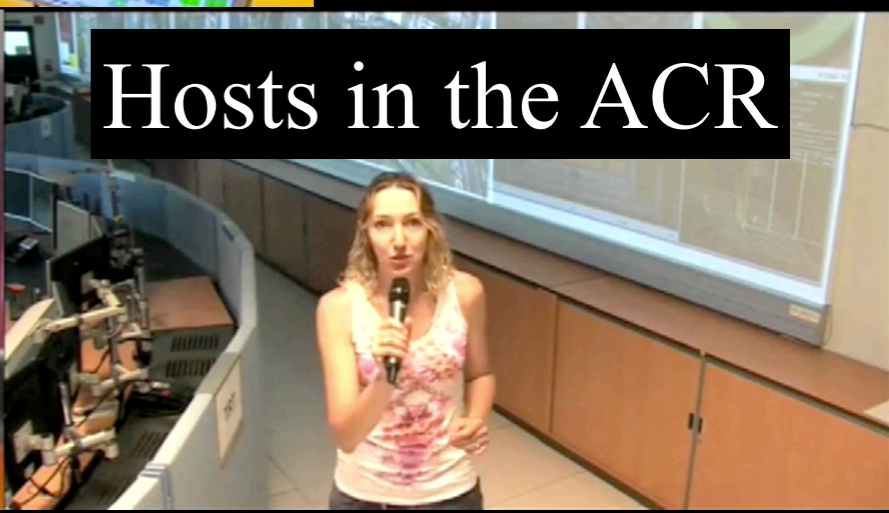
ATLAS control room

Visit the ATLAS

1:13 / 1:42



Virtual visitors



Hosts in the ACR

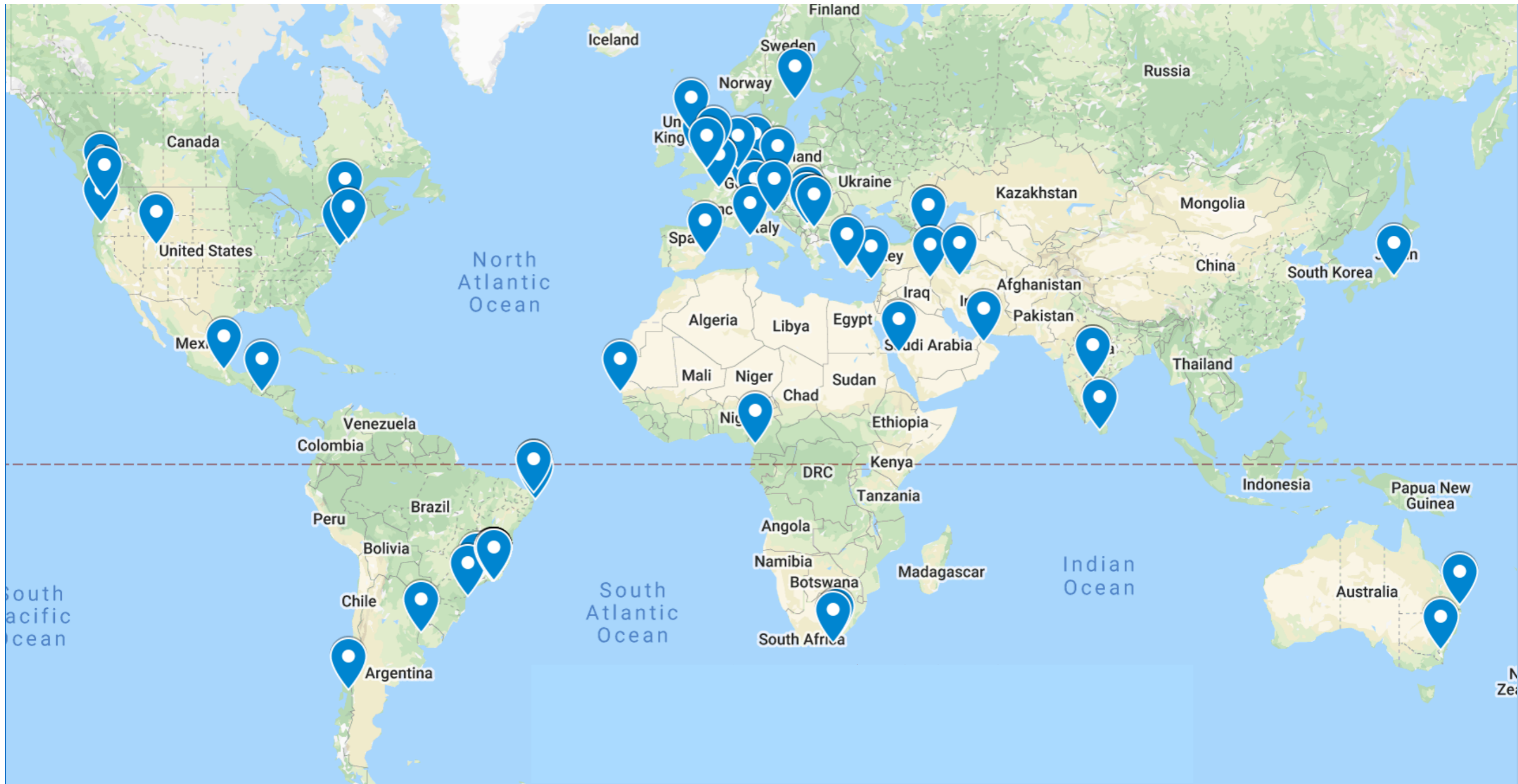
Hosts in the ACR















Tens of thousands of viewers  
Visits from 6 populated continents  
More than 75 visits in 2019







## Audiences include festivals, teachers, and students

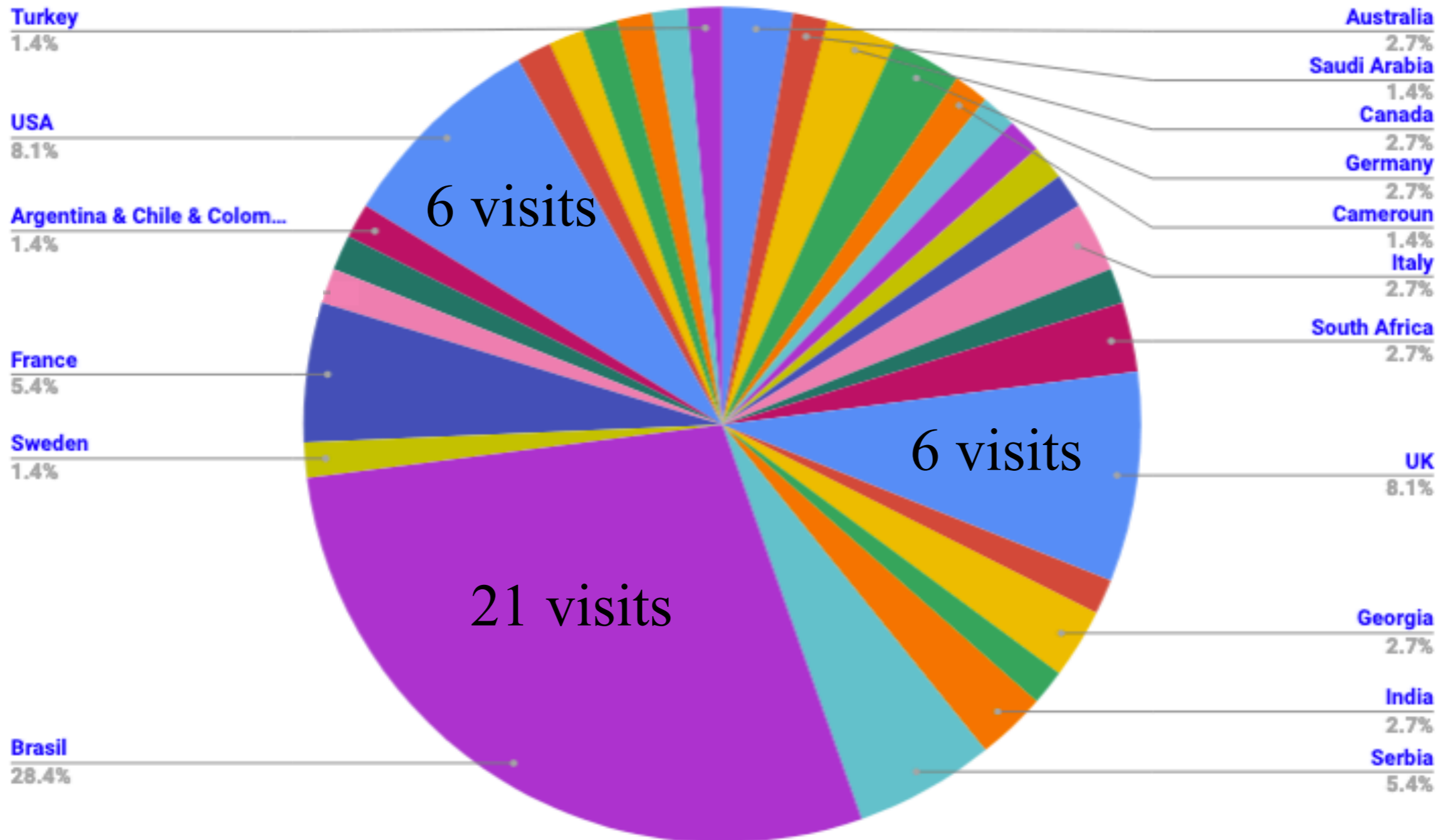
Date & CERN time	Link to Visit Page	City	Visit Status	Visit Title	Virtual Guide	Audience Type
04/27/2018 - 17:15		Taos Pueblo	Finished	<a href="#">Taos Pueblo Day School</a>	Steven Goldfarb	Primary <12
02/14/2018 - 21:00		Toronto	Finished	<a href="#">École secondaire Toronto Ouest</a>	Claire Adam & Michael Hoch	Teachers
11/25/2017 - 09:00		Los Angeles	Finished	<a href="#">Loscon 44: Science Fiction &amp; Fantasy Convention</a>	Katarina Anthony, Chris Martin	Public
05/19/2017 - 11:30		Moogfest, Durham NC	Recorded	<a href="#">Moogfest - The Armory</a>	Julia Gonski, Chris Martin	Public
07/30/2016 - 15:00		Womad, Malmesbury	Recorded	<a href="#">WOMAD festival</a>	Steve Goldfarb	Public
12/02/2015 - 15:00		Taos, New Mexico	Finished	<a href="#">Taos High School &amp; Academy</a>	Steve Goldfarb	Secondary Students
11/14/2015 - 08:00		Singapore	Finished	<a href="#">ArtScience Museum, Singapore</a>	Emmanuel Tsesmelis	Public
06/05/2014 - 18:00		Albuquerque	Recorded	<a href="#">National Hispanic Cultural Center</a>	Laura Jeanty	Secondary Students

Many of the talks are recorded...





Distributions of audience countries





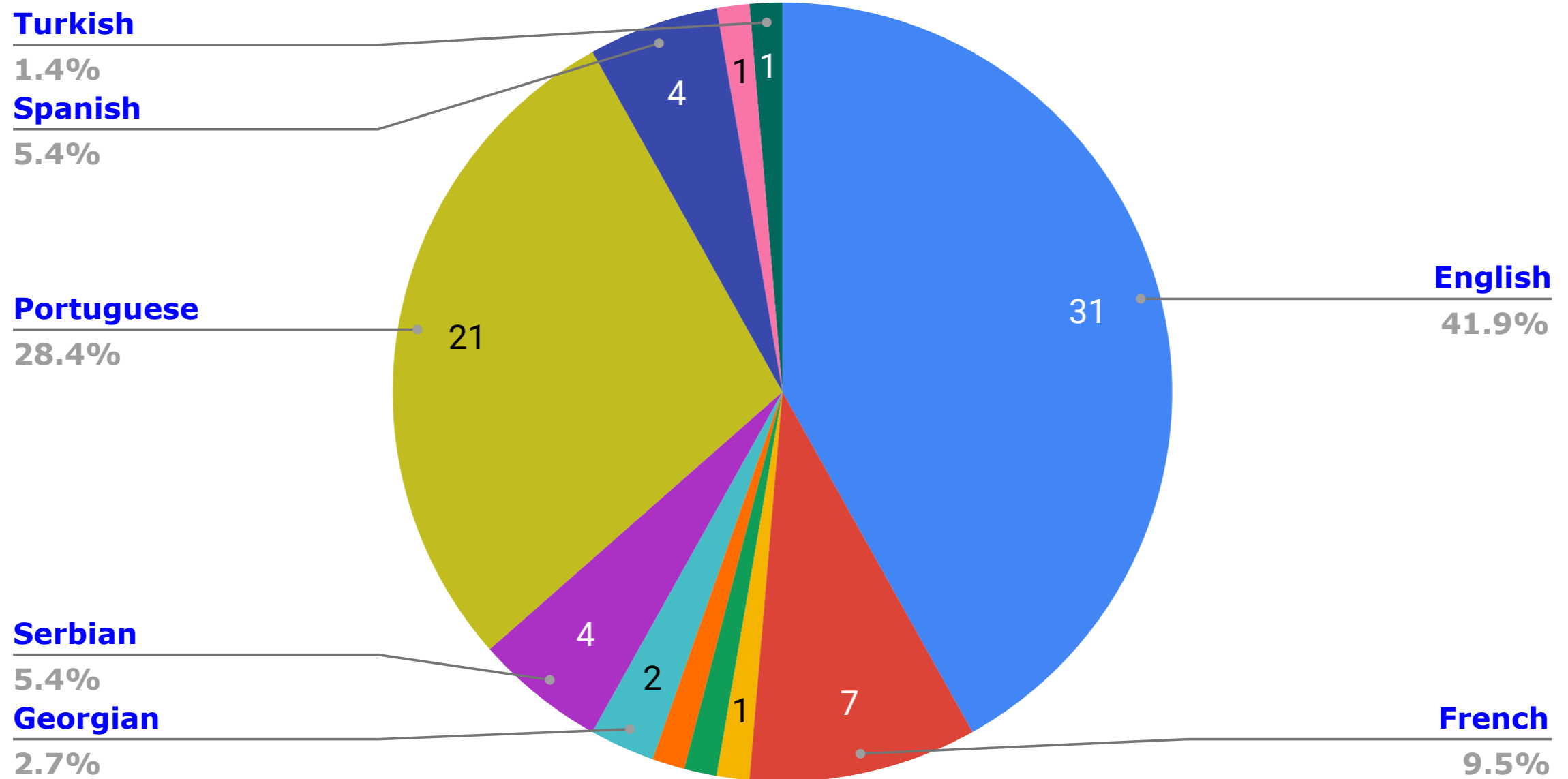
# Distribution by language

ATL-OREACH-SLIDE-2020-137

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## Language



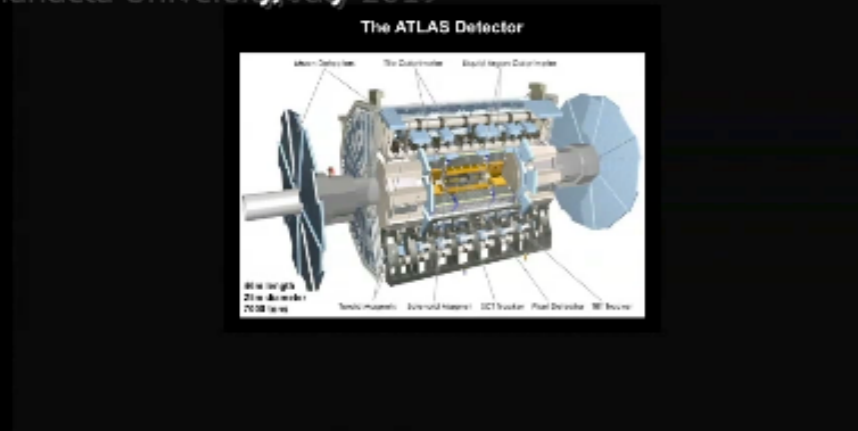




## Have an audience that might be interested?

- Checkout a sample visit (including a trip to the cavern, [link](#))
- Other pre-recorded visits ([link](#))
- Checkout the promotional video

Virtual Visit underground to the ATLAS detector with Nelson Mandela University, July 2019



ATLAS Virtual Visit Promotional Video



25:29 / 39:14



0:19 / 1:42



<https://atlasvirtualvisit.web.cern.ch/>





## Technical requirements

- Computing for video conferencing with 1Mbs internet connection
- Or a video conferencing setup (e.g., Polycom)

## Fill out the paper work

- Fill it out with sufficient notice: prefer 4 weeks

## Prepare for the virtual visit

- Test the video connection before the visit
- Feel free to utilize existing outreach materials

Register your visit here:

<https://atlasvirtualvisit.web.cern.ch/content/prepare-your-visit>

*COVID19 note: visits with hosts connecting from home occurring now, and slowly introducing cavern visits as possible*



# August 5, 2020 @ 14h

<https://bigbangstage.web.cern.ch/>

## THE BIG BANG STAGE

at ICHEP2020

### Live underground visit to the ATLAS experiment at CERN, Switzerland

14:00 - LIVE LINK

Speakers: Clara Nellist: Radboud University, The Netherlands and Muhammad Alhroob: Oklahoma University, USA

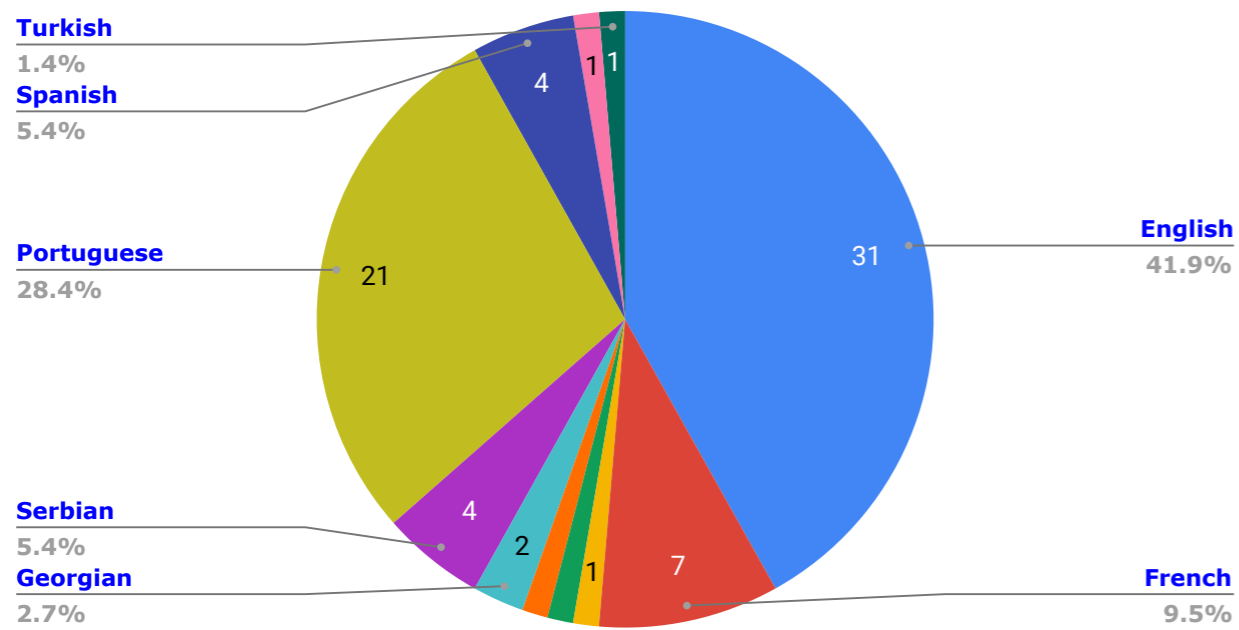
Go 100m underground and join ATLAS physicists Clara Nellist and Muhammad Alhroob on a live tour of the ATLAS experiment at CERN, see up close a marvel of science and engineering and have the chance to ask them your questions on site LIVE.



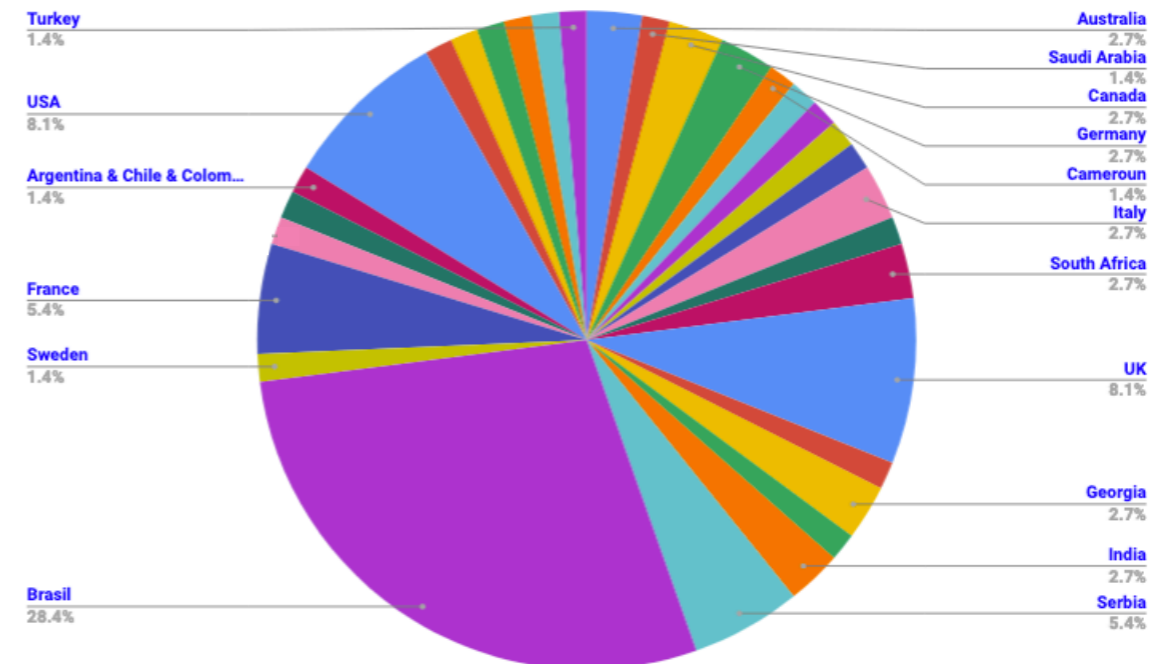




Language



Distributions of audience countries



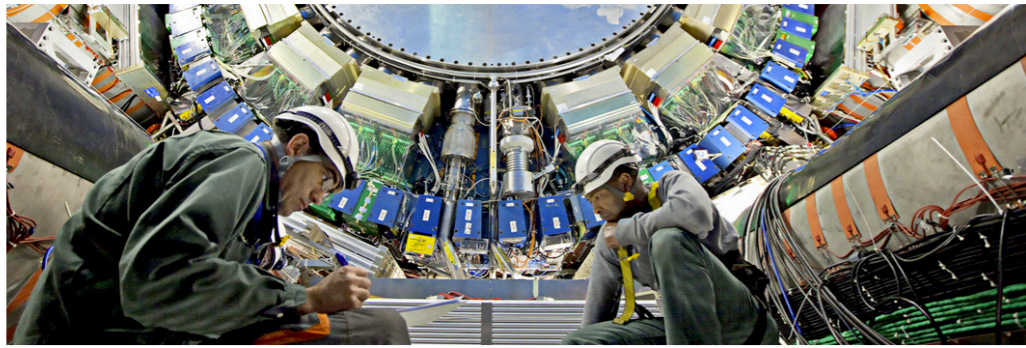


# ATLAS virtual walk through

Ben Carlson



## Detector & Technology



The largest volume detector ever [constructed](#) for a particle collider, ATLAS has the dimensions of a cylinder, 46m long, 25m in diameter, and sits in a [cavern](#) 100m below ground. The ATLAS detector weighs 7,000 tonnes, similar to the weight of the Eiffel Tower.

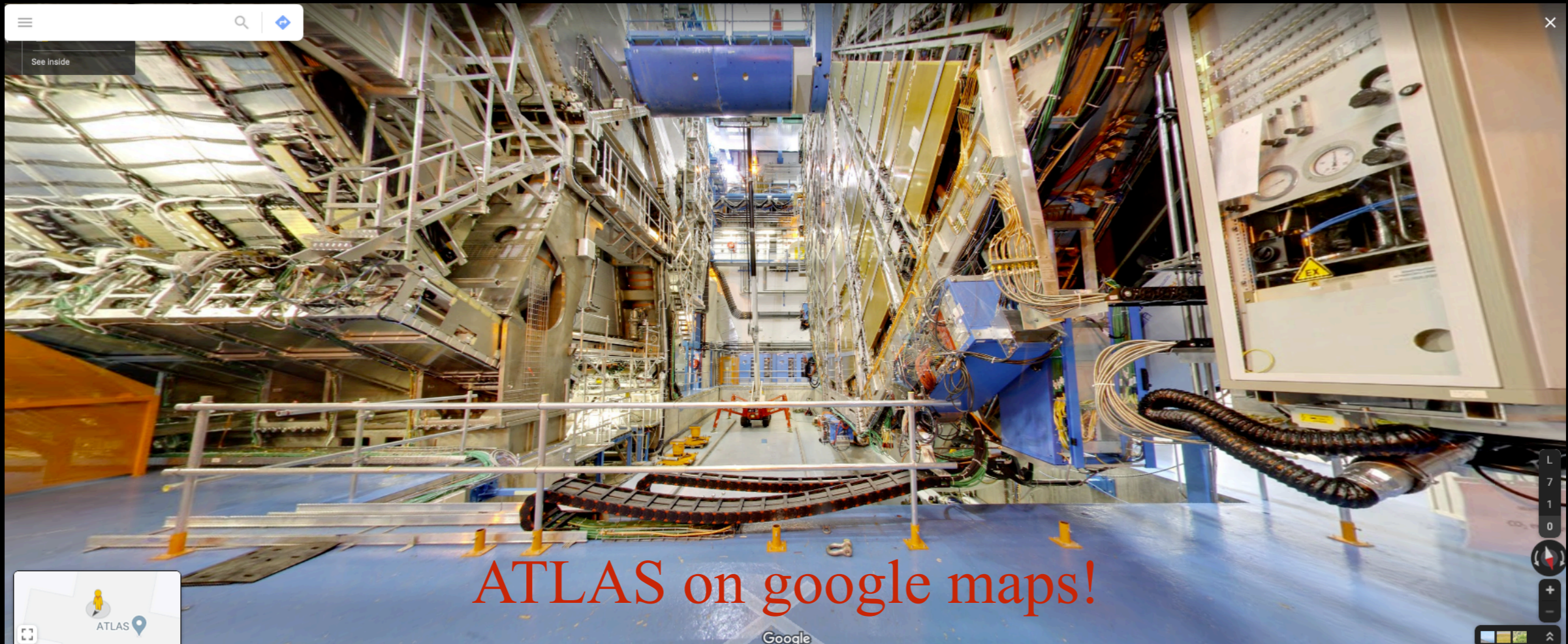
The detector itself is a many-layered instrument designed to detect some of the tiniest yet most energetic particles ever created on earth. It consists of six different detecting subsystems wrapped concentrically in layers around the collision point to record the trajectory, momentum, and energy of particles, allowing them to be individually identified and measured. A huge magnet system bends the paths of the charged particles so that their momenta can be measured as precisely as possible.

Beams of particles travelling at energies up to seven trillion electron-volts, or speeds up to 99.999999% that of light, from the LHC [collide at the centre of the ATLAS detector](#) producing collision debris in the form of new particles which fly out in all directions. Over a billion particle interactions take place in the ATLAS detector every second, a data rate equivalent to 20 simultaneous telephone conversations held by every person on the earth. Only one in a million collisions are flagged as potentially interesting and recorded for further study. The detector tracks and identifies particles to investigate a wide range of physics, from the study of the Higgs boson and top quark to the search for extra dimensions and particles that could make up dark matter.

Take a [virtual walk](#) around the ATLAS Detector in the cavern at Point 1 of the LHC.

<http://atlas.cern/discover/detector>

Click the link



ATLAS on google maps!



# 360° tour of ATLAS

Ben Carlson



<https://youtu.be/On1WbLKP8DA>





Large diversity of events: festivals, teachers, schools...

Visits shared with partners & special events



Teachers Programs

IPPOG, Quarknet, CERN and HEP teachers programs



Le CERN et ses voisins

Une collision (presque) grandeur nature !



Shared Visits

With friends from other experiments



ArtScience & Festivals

Reaching people where they do not expect us

<http://atlasvirtualvisit.web.cern.ch/atlas-partnerships-projects>