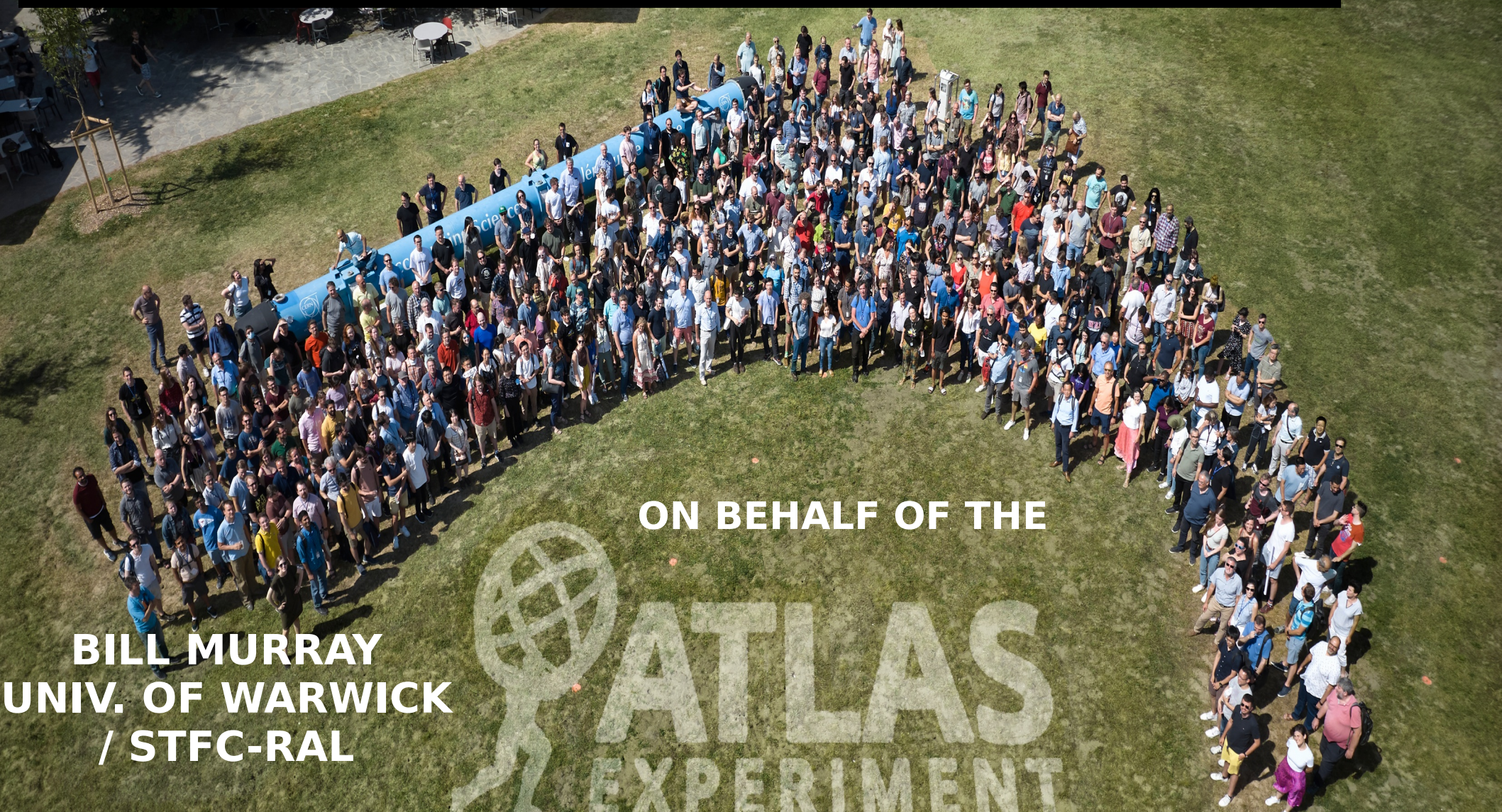# WHO WE ARE: EVOLUTION OF REGIONAL. AGE & GENDER DEMOGRAPHICS IN THE ATLAS COLLABORATION

ON BEHALF OF THE

BILL MURRAY
UNIV. OF WARWICK
/ STFC-RAL

ATLAS' TIMELINE

- 1983 LHC Programme initiated
- 1992 ATLAS Letter of intent
- 1999 ATLAS Technical Design Report
- 2008 First collisions
- 2009-2012 Run 1
- 2015-2018 Run 2
- 2022-   Run 3

Membership data from 1995 onwards

DIVERSITY

ATLAS is a large international collaboration: almost 6000 members.

As a community, we acknowledge our responsibility to society is greater than to just pursue our physics goals.

We have the opportunity to be an agent for change; we have a responsibility to provide an equitable environment.

I believe that the result will lead to the fullest outcomes of our physics goals.

"APPRECIATING DIFFERENCES, FOSTERING EQUALITY, AND PROMOTING COLLABORATION" — CERN CODE OF CONDUCT

Afghanistan	India	Romania
Algeria	Indonesia	Russia
Argentina	Iran	Rwanda
Armenia	Iraq	San Marino
Australia	Ireland	Saudi Arabia
Austria	Israel	Senegal
Azerbaijan	Italy	Serbia
Bahrain	Japan	Slovakia
Bangladesh	Kazakhstan	Slovenia
Belarus	Kenya	South Africa
Belgium	Kyrgyzstan	South Korea
Botswana	Latvia	Spain
Brazil	Lebanon	Sri Lanka
Bulgaria	Lithuania	Sudan
Canada	Madagascar	Sweden
Chile	Malawi	Switzerland
China	Malaysia	Syria
Colombia	Malta	Taiwan
Croatia	Mauritania	Thailand
Cuba	Mexico	Türkiye
Cyprus	Mongolia	Turkmenistan
Czech Republic	Montenegro	Ukraine
Denmark	Morocco	UAE
Ecuador	Nepal	Uganda
Egypt	Netherlands	UK
Ethiopia	New Zealand	Uruguay
Finland	North Macedonia	USA
France	Norway	Uzbekistan
Georgia	Pakistan	Venezuela
Germany	Palestine	Vietnam
Ghana	Paraguay	Yemen
Greece	Peru	Zambia
Guatemala	Philippines	Zimbabwe
Hungary	Poland	
Iceland	Portugal	

ATLAS Collaboration member nationalities

Over 5900 members of 103 nationalities

ATLAS EXPERIMENT

"unite people from all over the world to push the frontiers of science and technology, for the benefit of all" — CERN MISSION

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PURPOSE OF THIS ANALYSIS

ATLAS study group on diversity was established in 2015, with the following aims:

- Collect data on demographics, participation, leadership, recognition of contributions.

- Assess diversity and recommendations to best support it.

- **Contribute** to studies on **regional demographics** in science.

- **Contribute** to studies on the **role of women** in science.

Collaboration contacts for Diversity and Inclusion were established in 2017.

FOUR DIVERSITY & INCLUSION CONTACTS

https://atlas.cern/diversity

ROLE

Act as contact for ATLAS members to discuss concerns related to diversity and inclusion;

Maintain contacts with diversity groups or contacts in other HEP experiments and at CERN;

Maintain a list of resources that can be referenced or employed when issues related to diversity and inclusion occur;

Evaluate possibilities of training courses offered by CERN or external providers, and (if applicable) propose them.

ACTIVITES

Maintain wiki with resources;

Foster behaviour in line with the CERN code of conduct;

Push for inclusive language;

Encourage diversity in appointments and speaker selection;

Respond to concerns raised (sometimes anonymously).

DATA AVAILABLE

DATA COLLECTED

Data collected through the CERN administrative database:

- Name

- Gender: male, female

- Date of birth

- Profession

- Affiliation/Institution

- Nationality

Augmented by ATLAS databases that track participation:

Contributions

Technical

Leadership roles

Recognitions

Data is presented in three time blocks based on the ATLAS timeline.

DEFINITIONS

Member: someone who belongs to the ATLAS collaboration.

Author: someone whose name is included in ATLAS publications.

ATLAS members become an author after: membership for 1 year,
completing a qualification task (80 working days),
not an author of another LHC collaboration.

Gender: as stated by government issued ID (generally passport), option between male or female.

Home institution*: research or educational organisation to which a person belongs.

*Not to be confused with Nationality.

AUTHORS & FRACTION OF WOMEN AUTHORS

ATLAS benchmark values (2022):

Fraction of women authors: 22%

Fraction of women authors aged over 35 years: 19%

CERN benchmark values (2021):

Fraction of women employed by CERN (staff & fellows): 21%

Fraction of women employed by CERN in STEM roles (staff & fellows): 12%
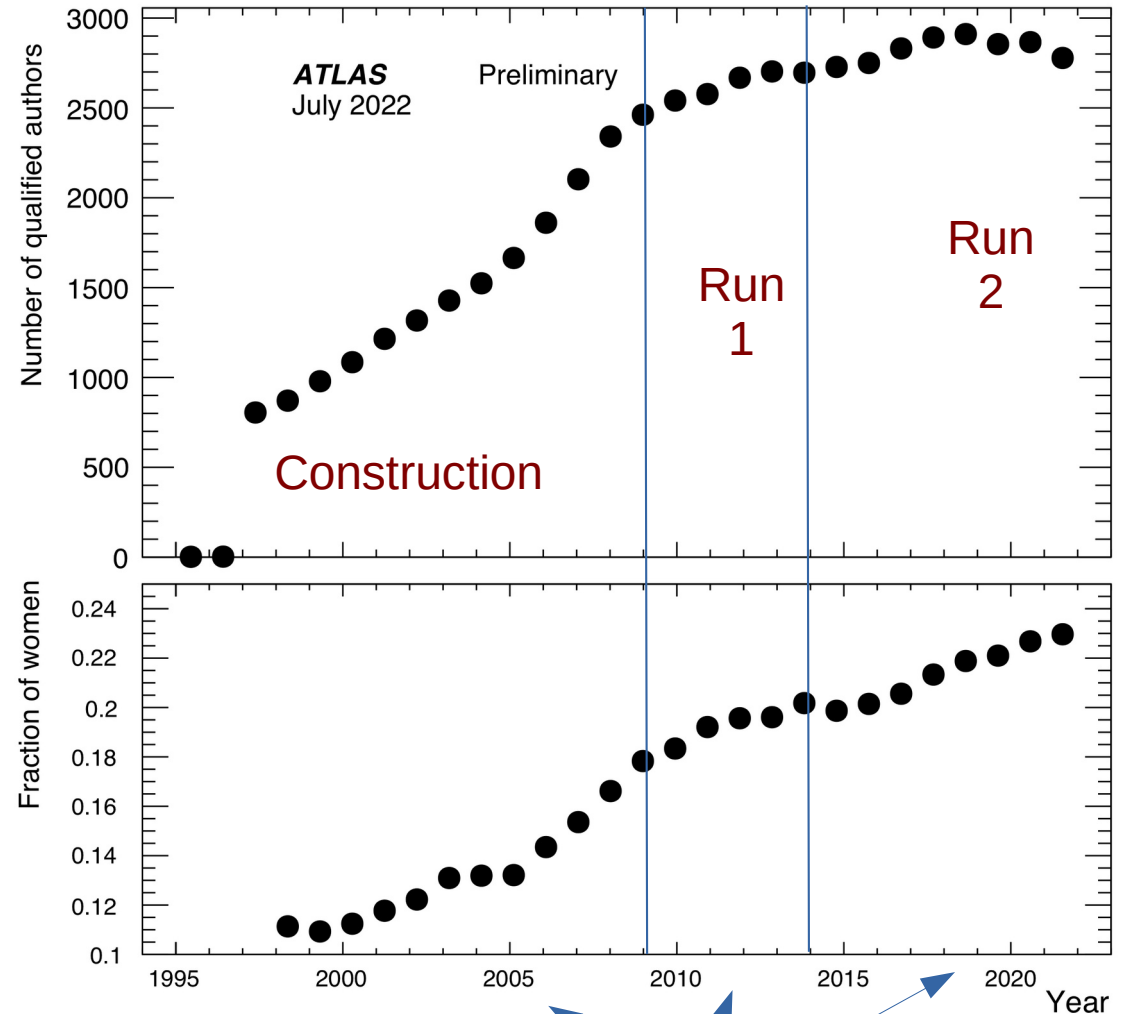
Some plots in these three bands

PROFESSIONS

ATLAS MEMBERS PROFESSION BREAKDOWN

(2019)

Technician or equivalent
5%

Admin/Others
2%

Engineering students
1%

Engineers w/o PhD
10%

Engineers w. PhD
5%

Physics PhD Students
21%

Physics masters/diploma students
8%

Undergrad/summer students
6%

Physicists
41%
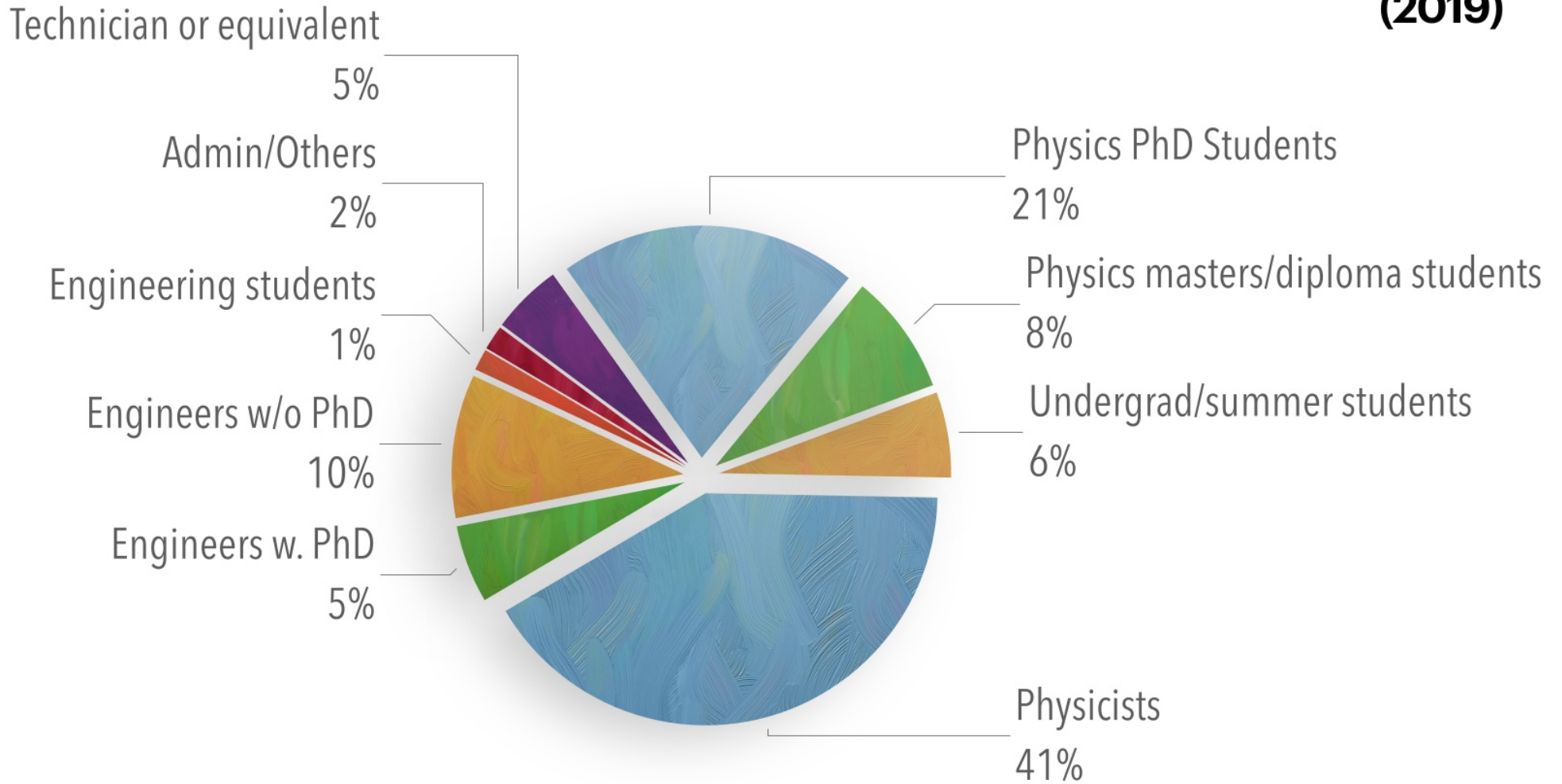
AGE
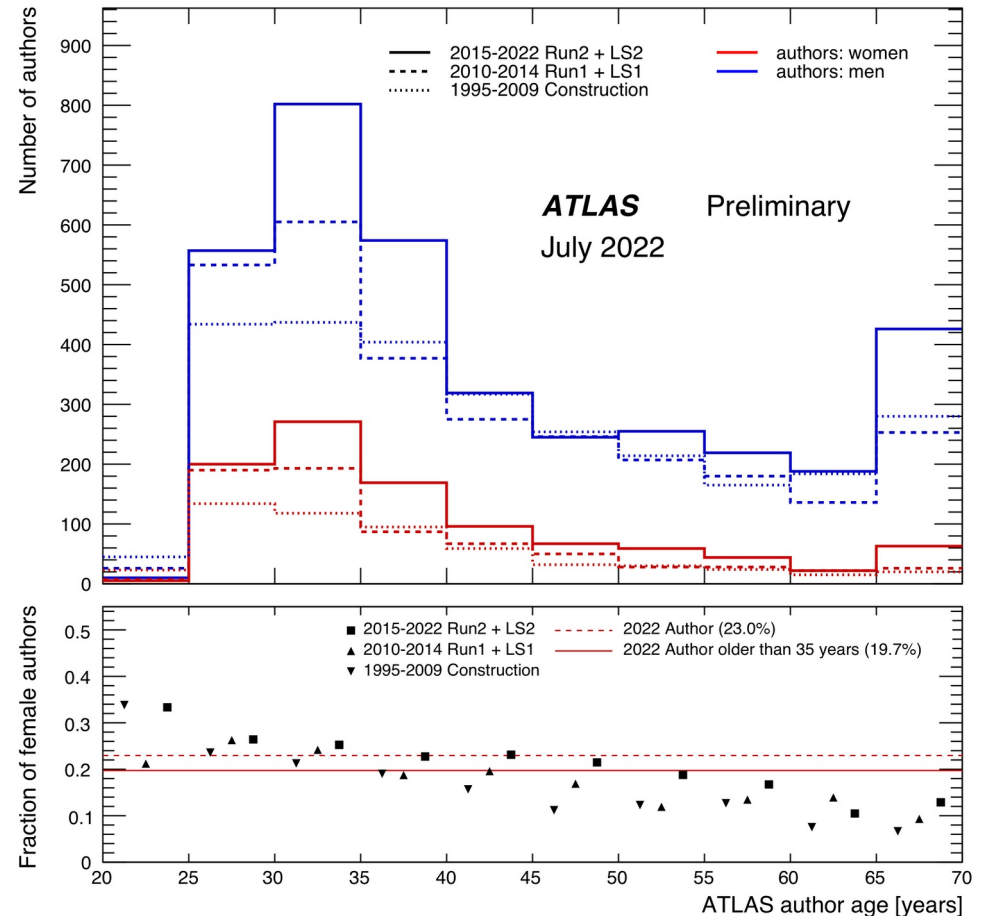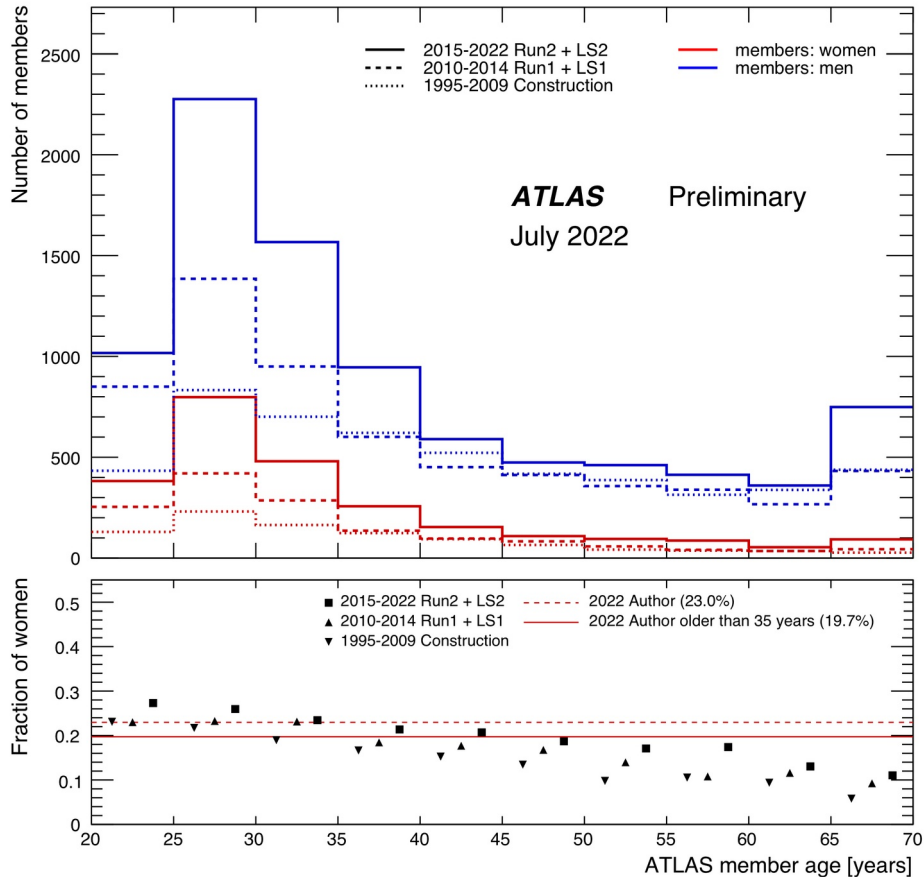
Mean age of collaboration members is becoming younger.

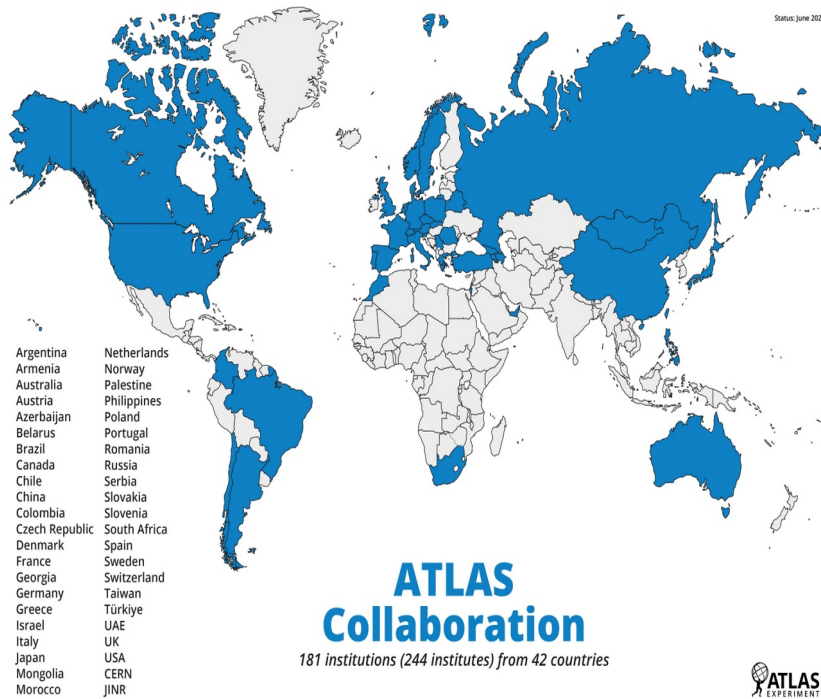**Over time, the fraction of women members/authors is increasing, inc. within age groups**

The fraction of women members & authors decreases with age.

Overall, the fraction of women members and the fraction of women authors follow the same trend by age group as well as time period.

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REGIONS

AUTHORS BY HOME INSTITUTION

Status: June 2022

ATLAS Collaboration

181 institutions (244 institutes) from 42 countries

Argentina, Armenia, Australia, Austria, Azerbaijan, Belarus, Brazil, Canada, Chile, China, Colombia, Czech Republic, Denmark, France, Georgia, Germany, Greece, Israel, Italy, Japan, Mongolia, Morocco, Netherlands, Norway, Palestine, Philippines, Poland, Portugal, Romania, Russia, Serbia, Slovakia, Slovenia, South Africa, Spain, Sweden, Switzerland, Taiwan, Türkiye, UAE, UK, USA, CERN, JINR

Asia: Armenia, Azerbaijan, China, Georgia, Japan, Taiwan

Eastern Europe: Belarus, Czechia, Poland, Romania, Russia, Serbia, Slovakia, Slovenia

Mediterranean: France, Greece, Israel, Italy, Portugal, Spain, Turkey, Morocco

North America: Canada, USA

Northern Europe: Austria, Denmark, Germany, the Netherlands, Norway, Sweden, Switzerland (including CERN), UK

Southern Hemisphere: Argentina, Australia, Brazil, Chile, Colombia, South Africa
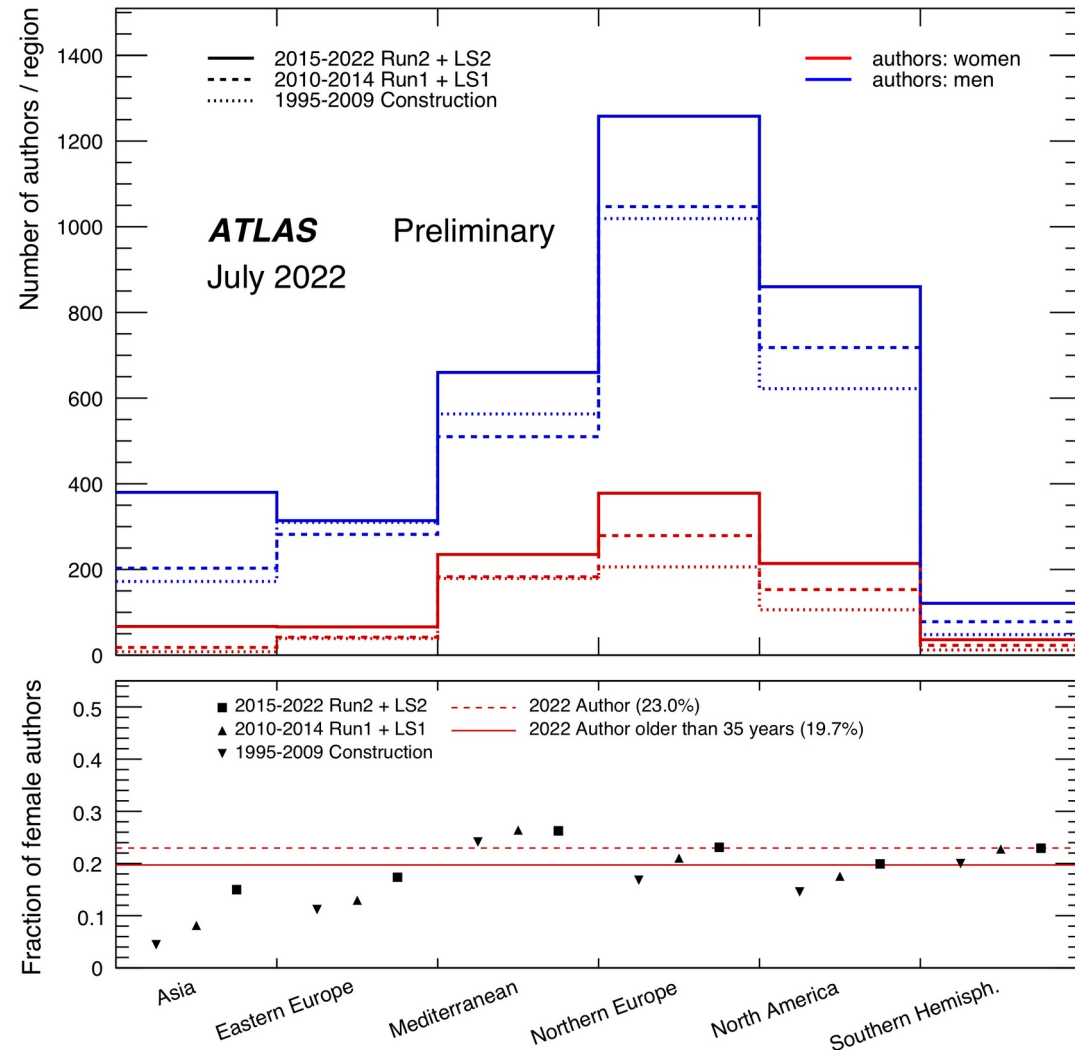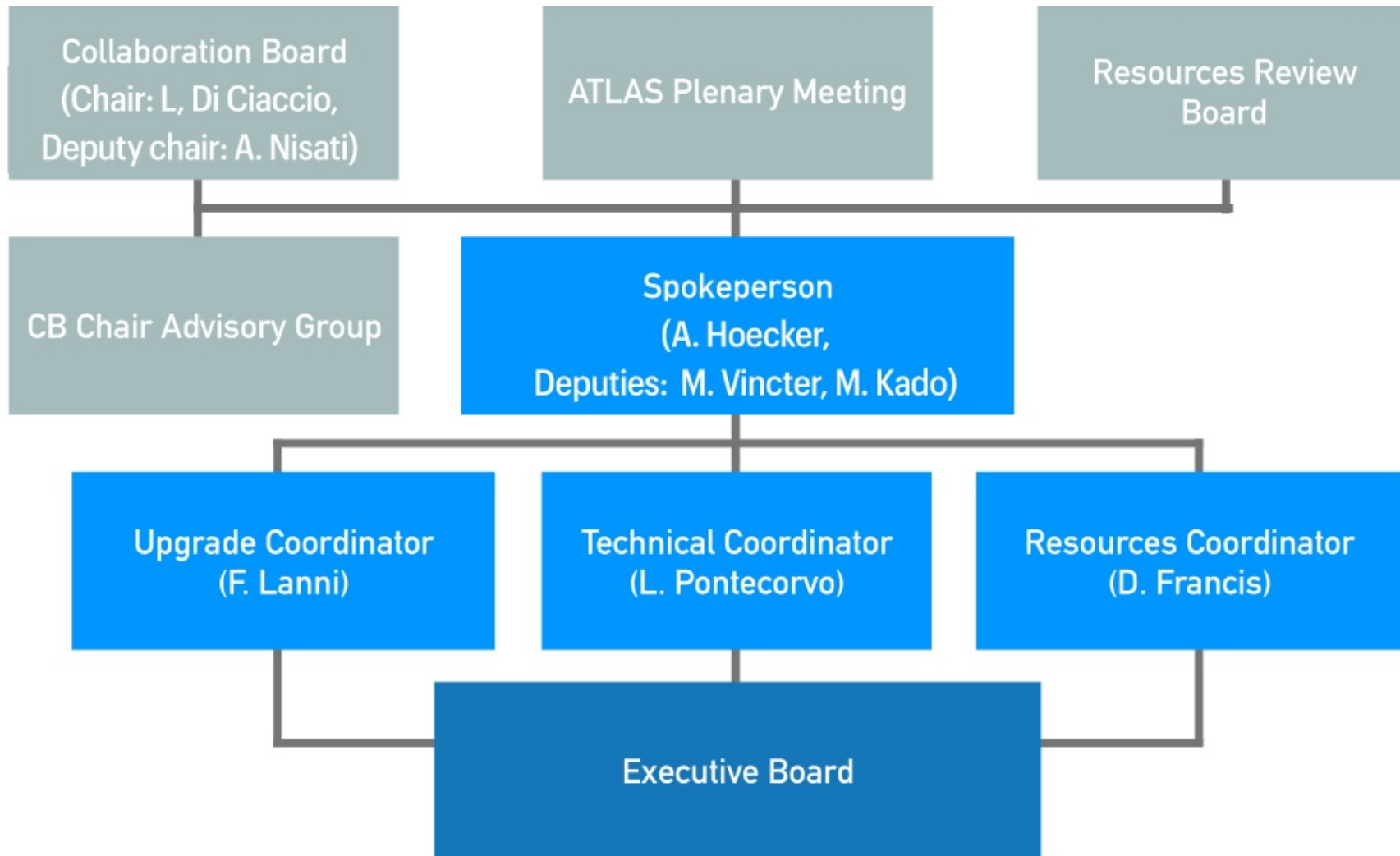
AUTHORS BY COUNTRY (GROUPING)
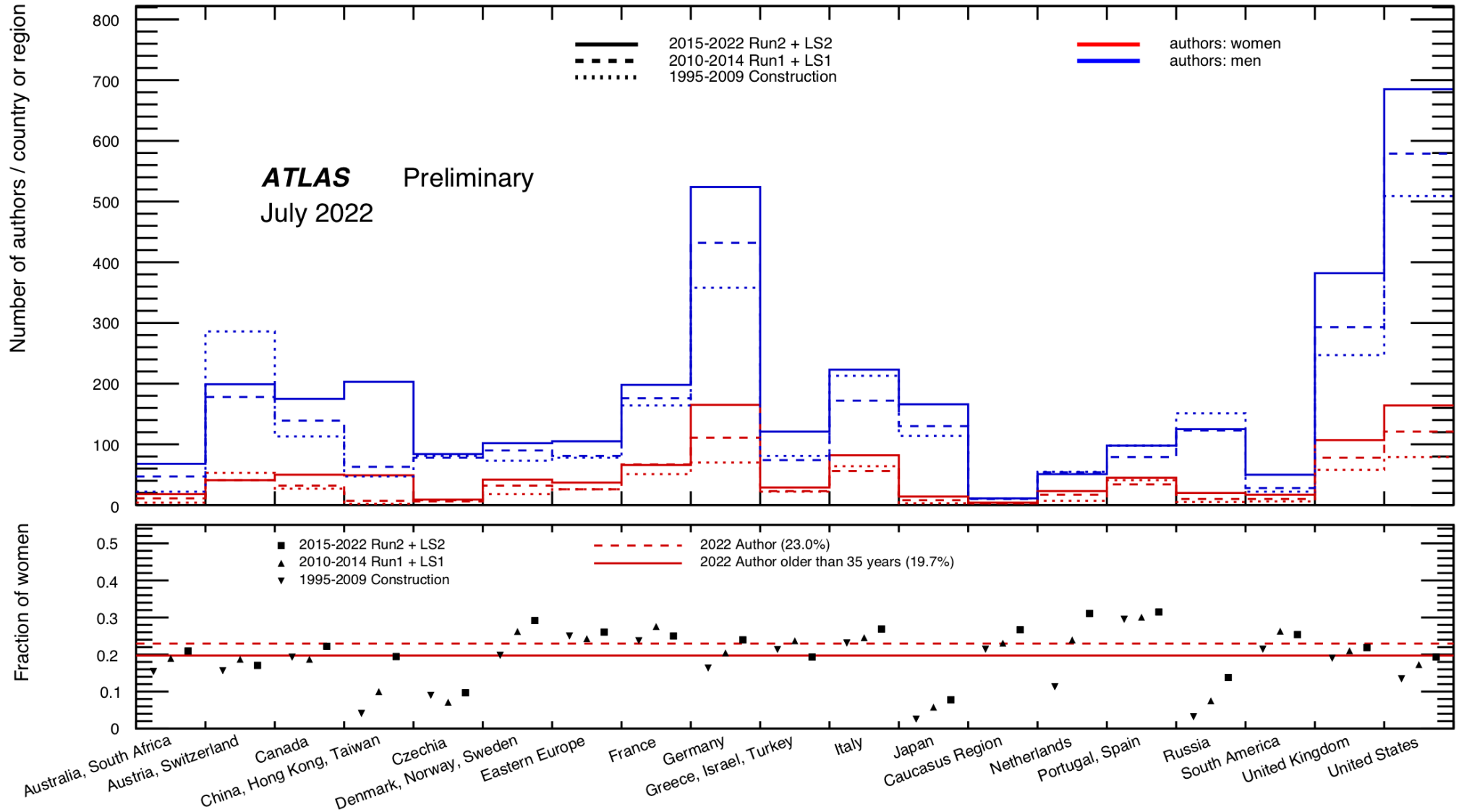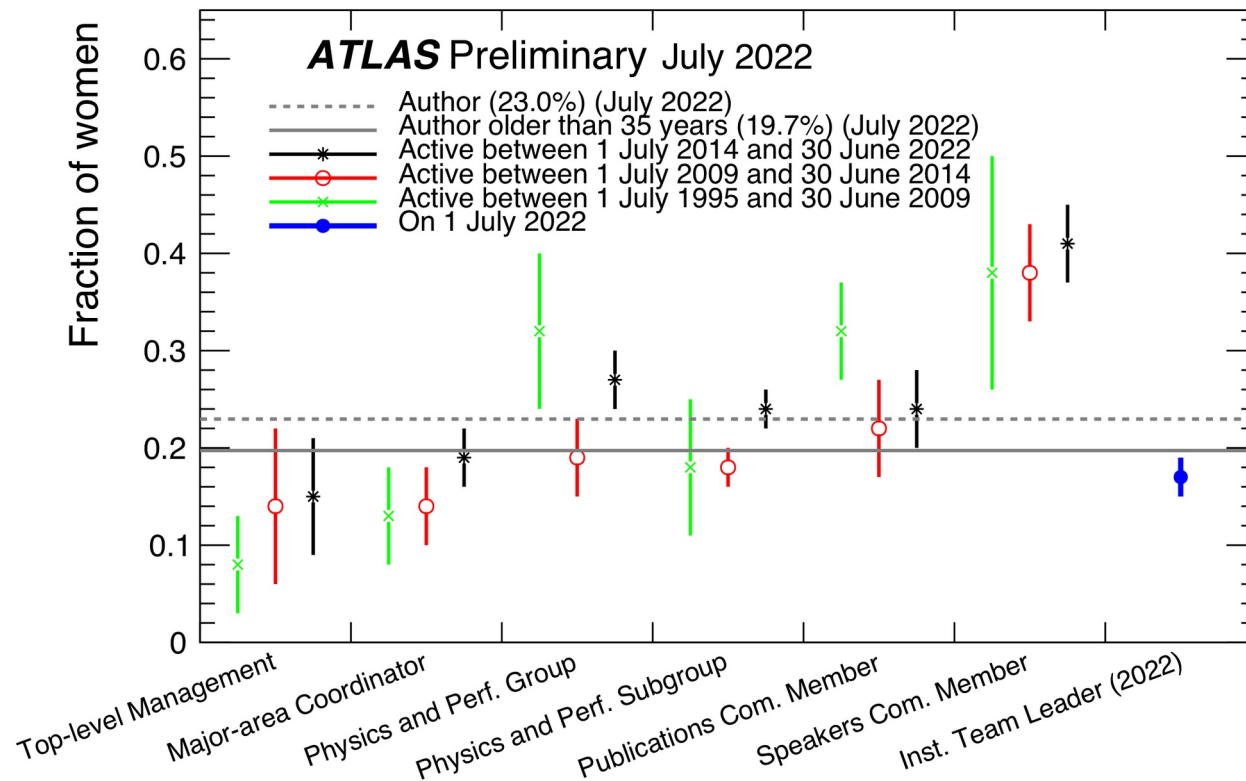
LEADERSHIP

TOP LEVEL MANAGEMENT

TOP LEVEL MANAGEMENT

FRACTION OF WOMEN IN LEADERSHIP ROLES

Top level management: spokesperson, 2 deputies;
    technical, resource, upgrade coordinator;
    2y term

Major area coordinators: ~16; 2y term

Physics & performance group:
    18 group leaders, 2 per group; 2y term

Physics & performance subgroup:
    ~2 conveners per subgroup; ~2y term

Publications Committee:
    12 members, 2y term
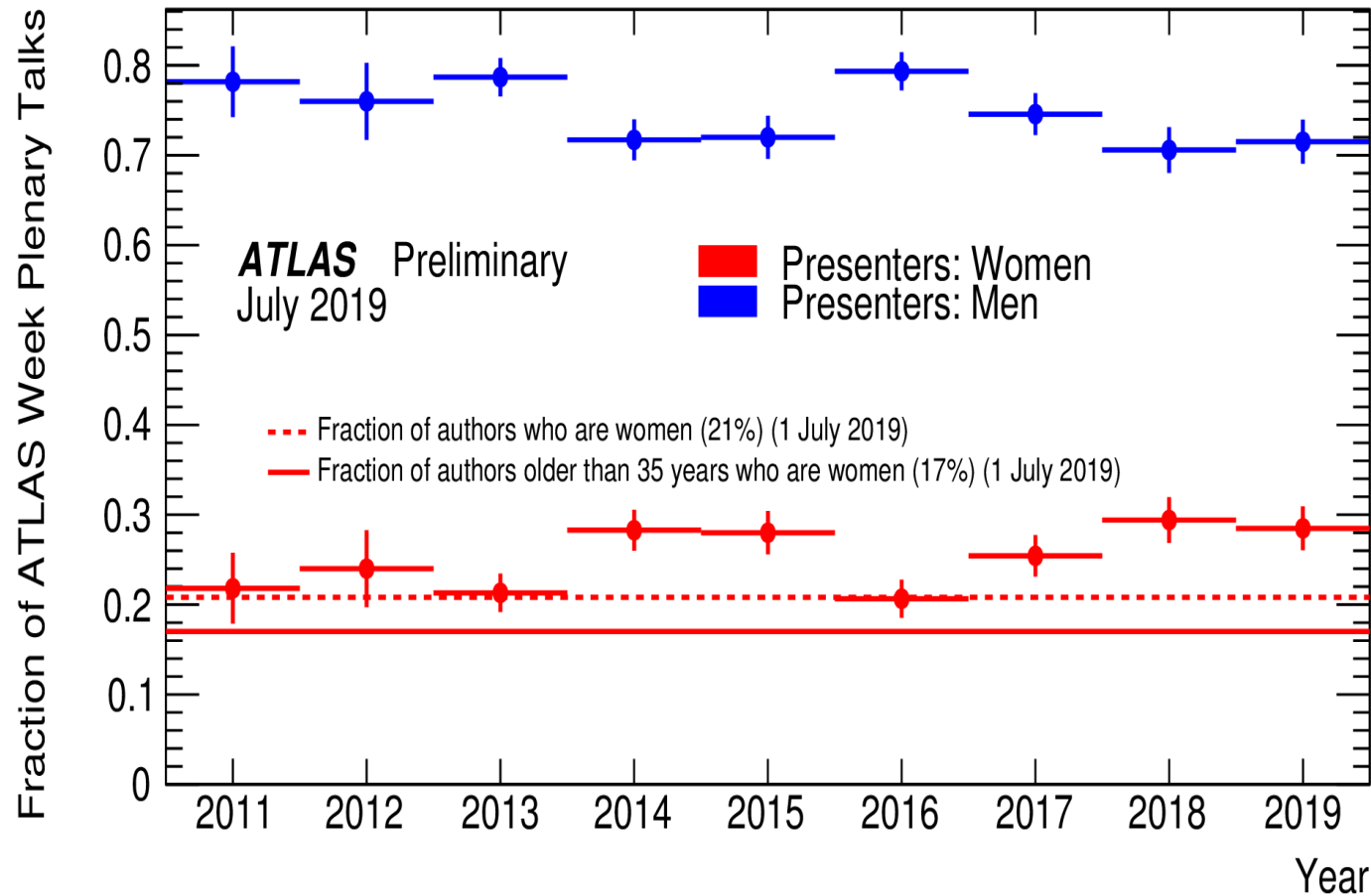
Speakers Committee:
    15 members, 3y term.

Institution Team Leader:
    182 ATLAS member institutions   Chosen by institutions

CONTRIBUTIONS

ATLAS WEEK PLENARY TALKS

ATLAS week takes place 3 x year - 2 at CERN, 1 outside CERN

All of the collaboration are invited - good forum for visibility

Fraction of contributions made by women is greater than fraction of women authors.

Because names of people in the Indico system can not be linked to entries in the CERN HR database, for this plot, gender is derived from first name using http://genderize.io

CLOSING

ATLAS is large, and diverse:

Both by necessity, and by choice.

The collaboration has committed to being inclusive and diverse.

Our collaboration is working to progress diversity and inclusion.

Positions of leadership are broadly reflective of our gender demographics.

We are constantly working to improve our environment.

LINKS

CERN code of conduct: https://hr.web.cern.ch/codeofconduct

CERN 25 by '25: https://diversity-and-inclusion.web.cern.ch/2021/04/25-25-journey

BACKUP

SUMMARY

ATLAS has members from over 90 nationalities, with ages spanning 5 decades.

    Fraction of women members in the collaboration decreases with age and varies significantly among different geographical regions.

    In 2019: ~21% of authors are women and ~17% of authors over 35y are women.

Some geographical regions have shown considerable membership growth over the years the ATLAS collaboration has been active.

    In parallel, almost all geographical regions have seen an increase in the fraction of women members.

Participation of women speakers at ATLAS week talks is currently greater than the fraction of women authors.

The fraction of leadership roles held by women members has increased during 2014-2019 years for all roles.

Current ATLAS Management

Andreas Hoecker
Spokesperson 2021-2023, Deputy 2017-2021

Marumi Kado
Deputy Spokesperson 2021-2023

Manuella Vincter
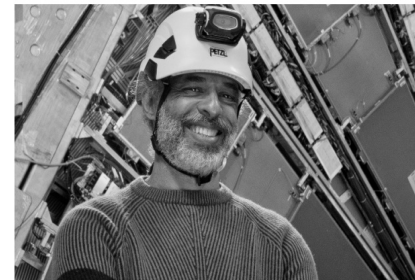Deputy Spokesperson 2019-2023

Francesco Lanni
Upgrade Coordinator 2019-2023

Ludovico Pontecorvo
Technical Coordinator 2015-2023

David Francis
Resource Coordinator 2019-2023

https://atlas.cern/Discover/Collaboration/Management/AndreasHoeck...

REGION COMMENTS

Asia, North America and the Northern Europe have experienced a considerable increase of authors.

Eastern Europe is the region with the slowest increase of authors.

Most regions have had a steady increase in the fraction of women authors except for the Mediterranean.

Mediterranean region has largest largest fraction of women authors in all three time periods.

Asia is the region with the smallest fraction of women authors.