

EVOLUTION OF REGIONAL, AGE, AND GENDER DEMOGRAPHICS IN THE ATLAS COLLABORATION

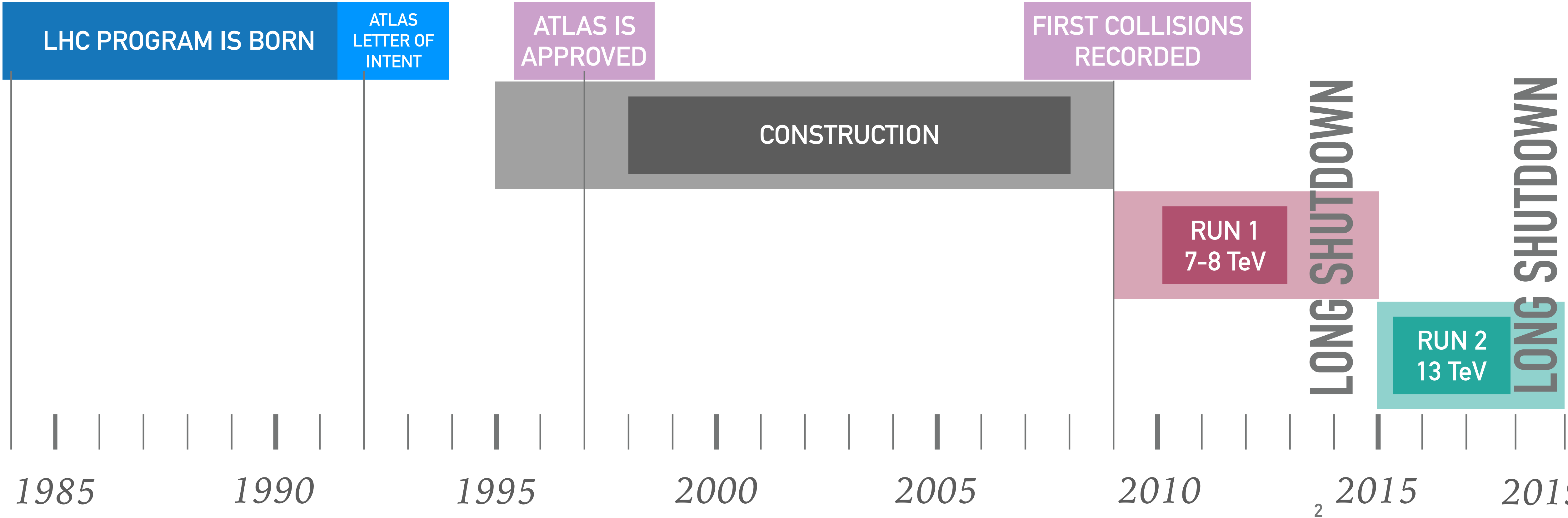
ANA MARIA RODRIGUEZ (YORK UNIVERSITY)
FOR THE ATLAS COLLABORATION



ATLAS
EXPERIMENT

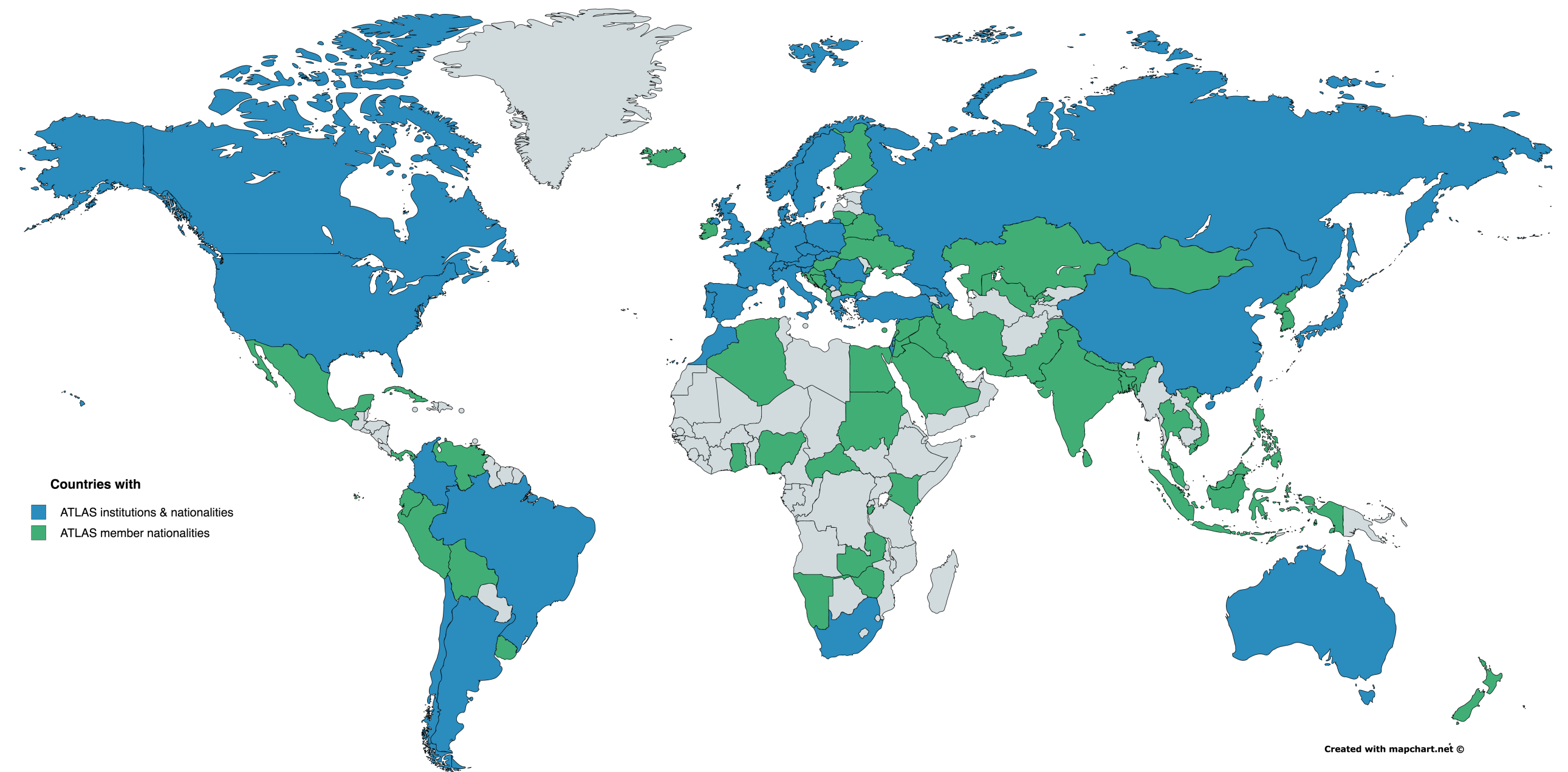
ABOUT ATLAS

Collaboration for the construction and operation of a general-purpose particle physics detector in the LHC ring, at CERN.



DIVERSITY

- It takes **a lot of people!** (~5900)
- **Large variety** with different age, gender, sexual orientation, gender identity, culture, physical ability, ethnicity, appearance, education, or religious background.
- **Diversity**: one of CERN's core values.



**APPRECIATING DIFFERENCES,
FOSTERING EQUALITY
AND PROMOTING COLLABORATION**
– CERN CODE OF CONDUCT

PURPOSE OF THIS TALK

Study group on diversity established in 2015.

- Collect data on demographics, participation, leadership filling, recognition of contributions.
- Assess diversity.
- Make recommendations to best support it.
- Contacts for Diversity and Inclusion established in 2017.
- **Contribute** to studies on **regional demographics in science.**
- **Contribute** to studies on the **role of women in science.**

A photograph of a busy data center or server room. In the foreground, three people are seated at a long desk, focused on their work. A woman on the left is looking at a laptop. A man in the middle is using a mouse. A man on the right is looking at a monitor. They are surrounded by multiple computer monitors displaying various data visualizations and code. In the background, other people are visible, some standing and some working at desks. The environment is dimly lit, with the primary light source being the computer screens. A semi-transparent dark blue banner with the text "DATA AVAILABLE" is overlaid across the center of the image.

DATA AVAILABLE

DATA COLLECTED

Data is collected, through the **CERN administrative database**.

- Name
- Gender: male, female
- Date of birth
- Profession
- Affiliation/Institution
- Nationality

Augmented by other databases that track participation:

- Contributions
- Technical
- Leadership roles
- Recognitions

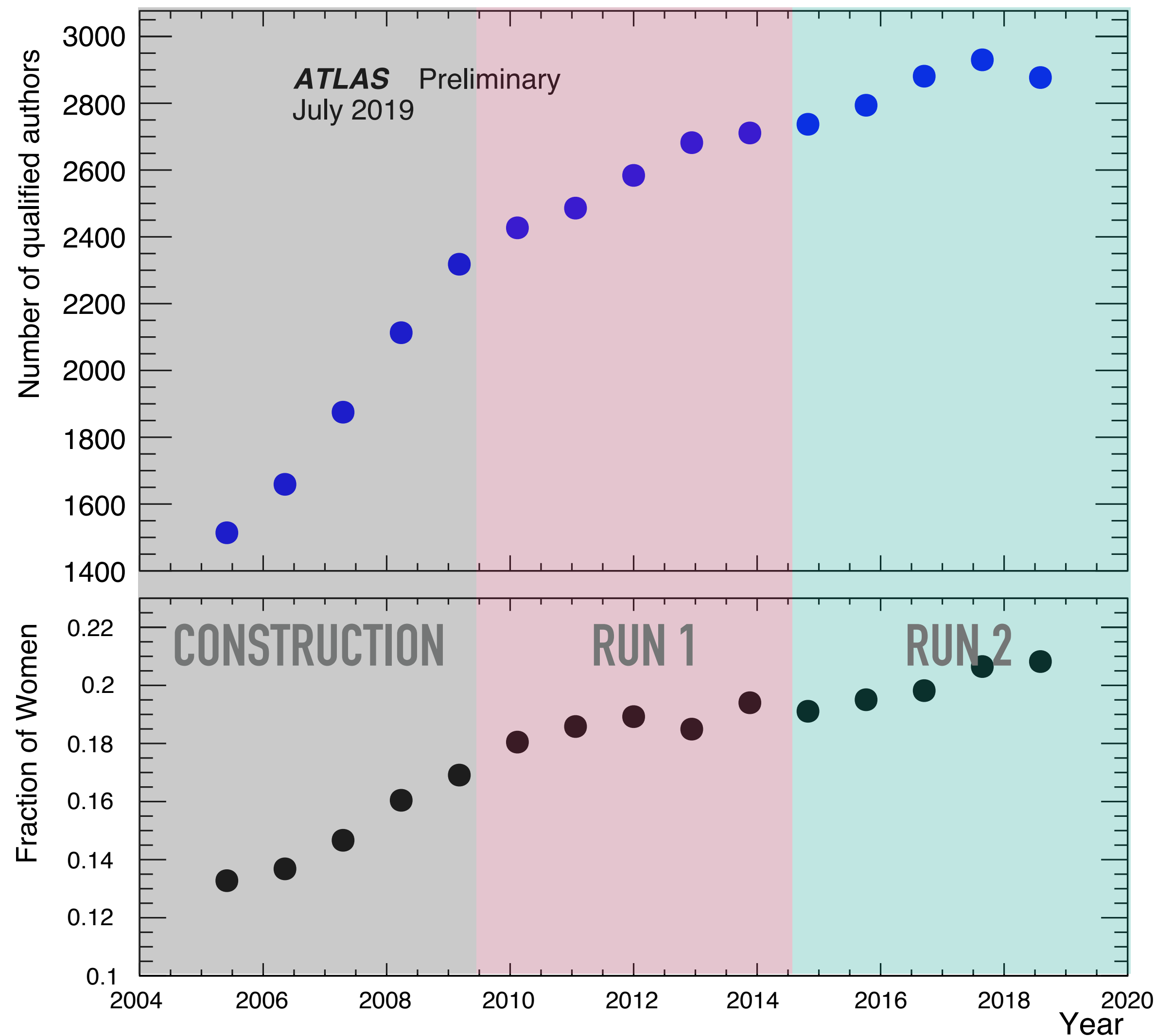
Data will be presented in 3 time blocks based on the ATLAS timeline.

SOME DEFINITIONS

- **Member**: someone who belongs to the ATLAS collaboration.
- **Author**: someone whose name is included in ATLAS publications.
- **Gender**: as stated by government issued ID (generally passport), option between male or female.
- **Home institution***: research or educational organization to which a person belongs.

*Not to be confused with Nationality.

AUTHORS AND FRACTION OF WOMEN AUTHORS

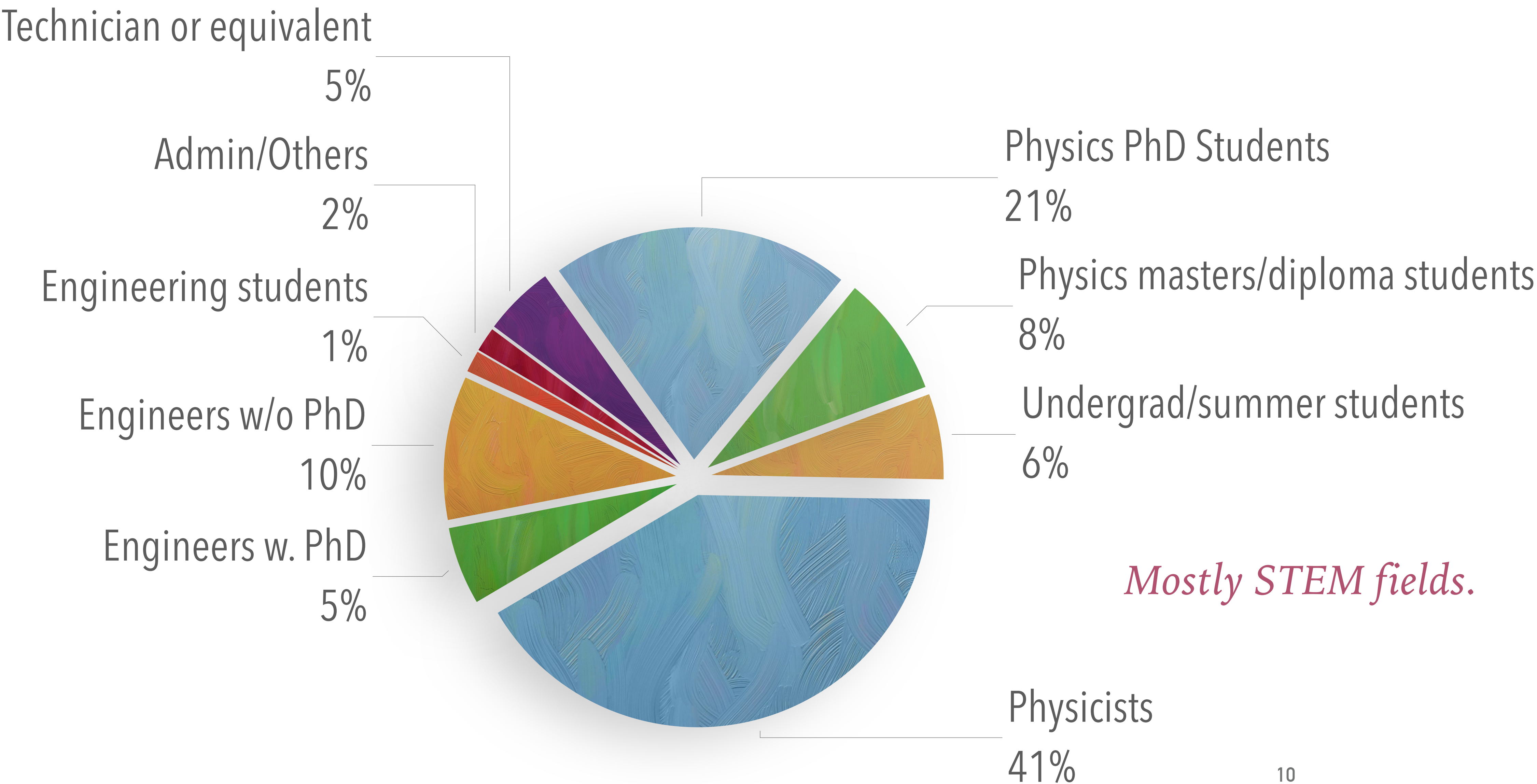


- Fraction of women authors has increased, overall.
- Values of current fraction of women authors and current fraction of women authors older than 35 yrs will be included in fraction plots as reference.
- Colours indicate three time periods of plots to follow.

A man with grey hair and glasses, wearing a white lab coat, is working on a piece of equipment. He is using a screwdriver to adjust a component on a green circuit board. The equipment has yellow labels with text like "LYO-005" and "X-X".

PROFESSIONS

ATLAS MEMBERS PROFESSION BREAKDOWN

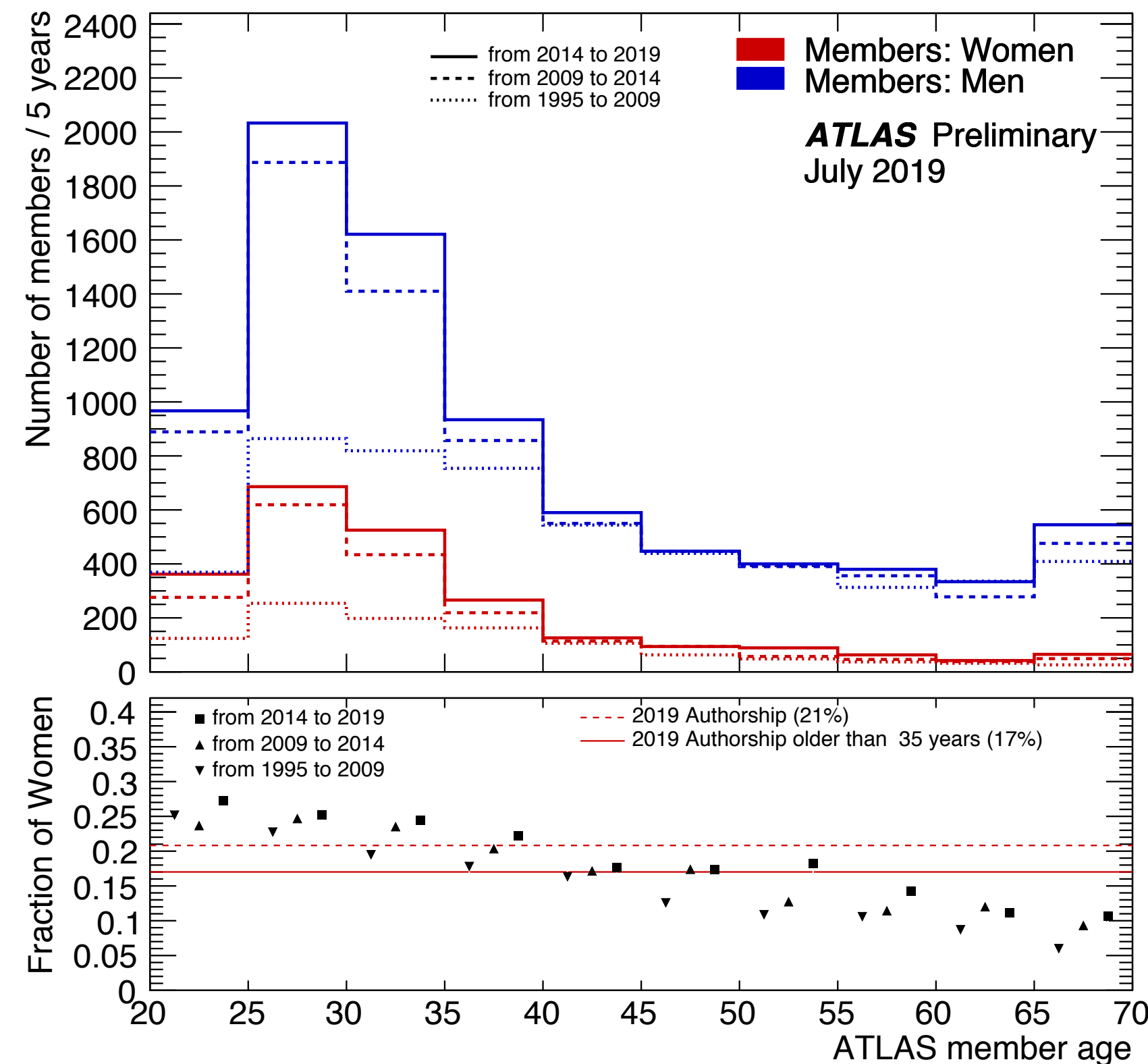




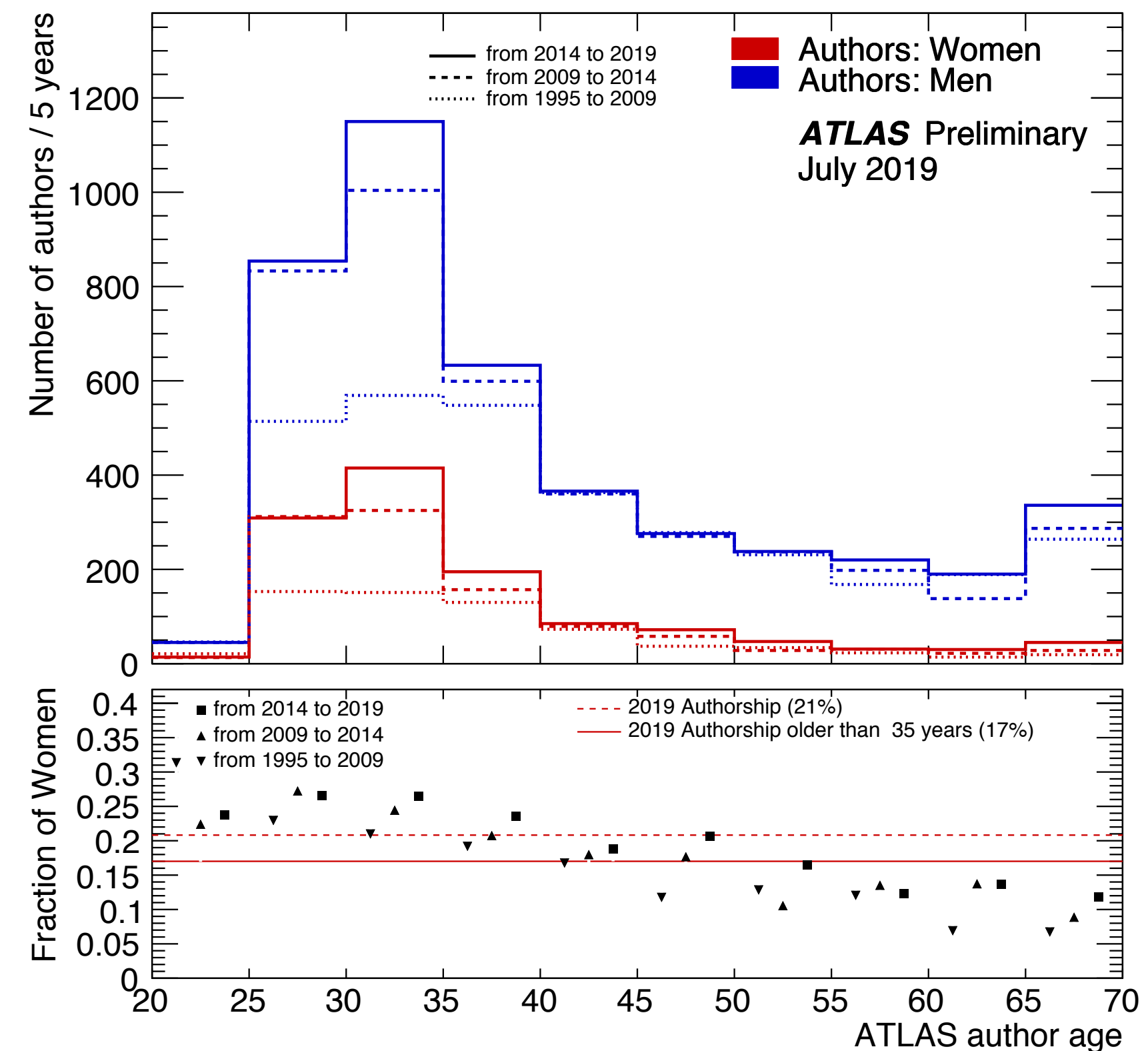
AGE

AGE DISTRIBUTION – FRACTION OF WOMEN

members



authors



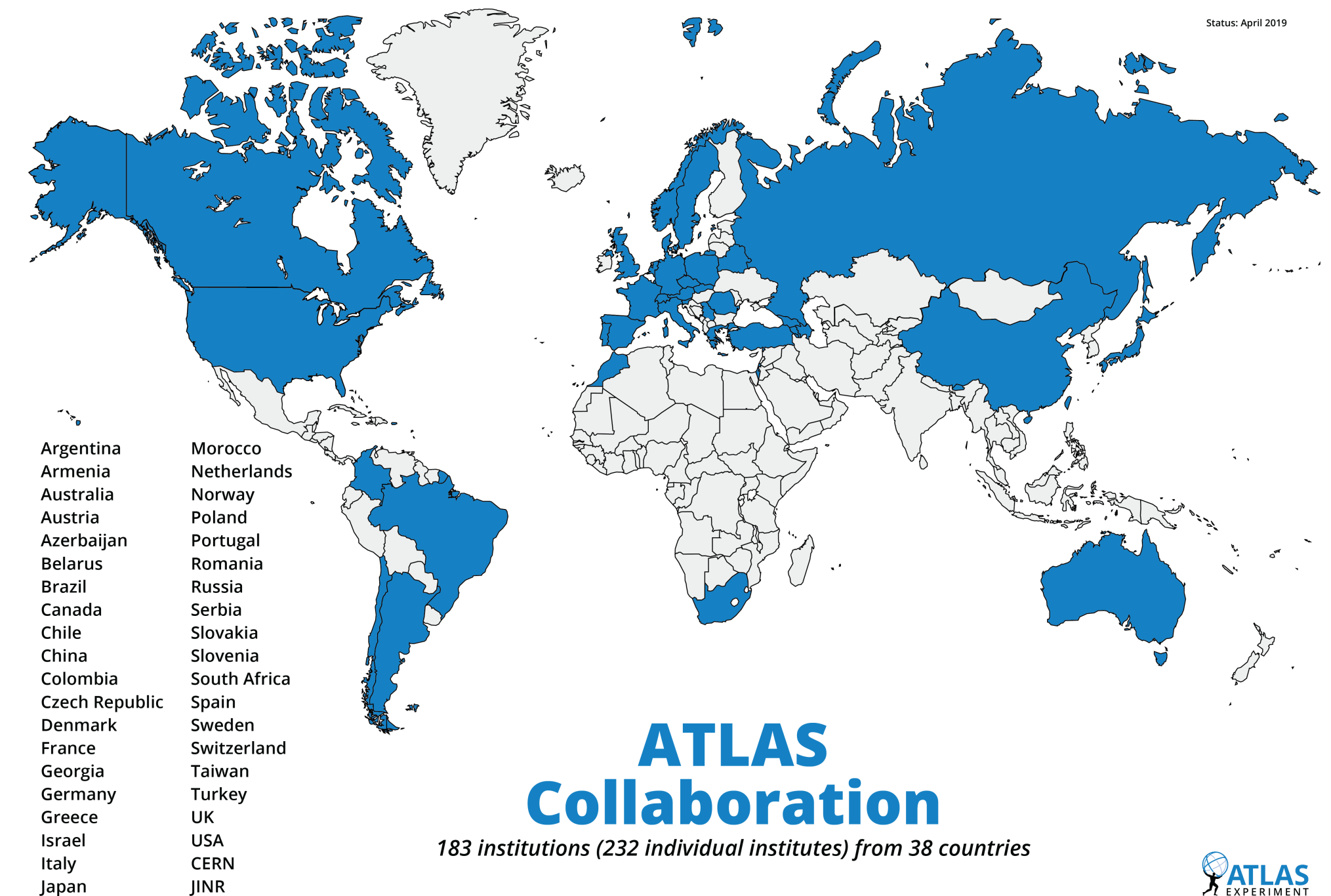
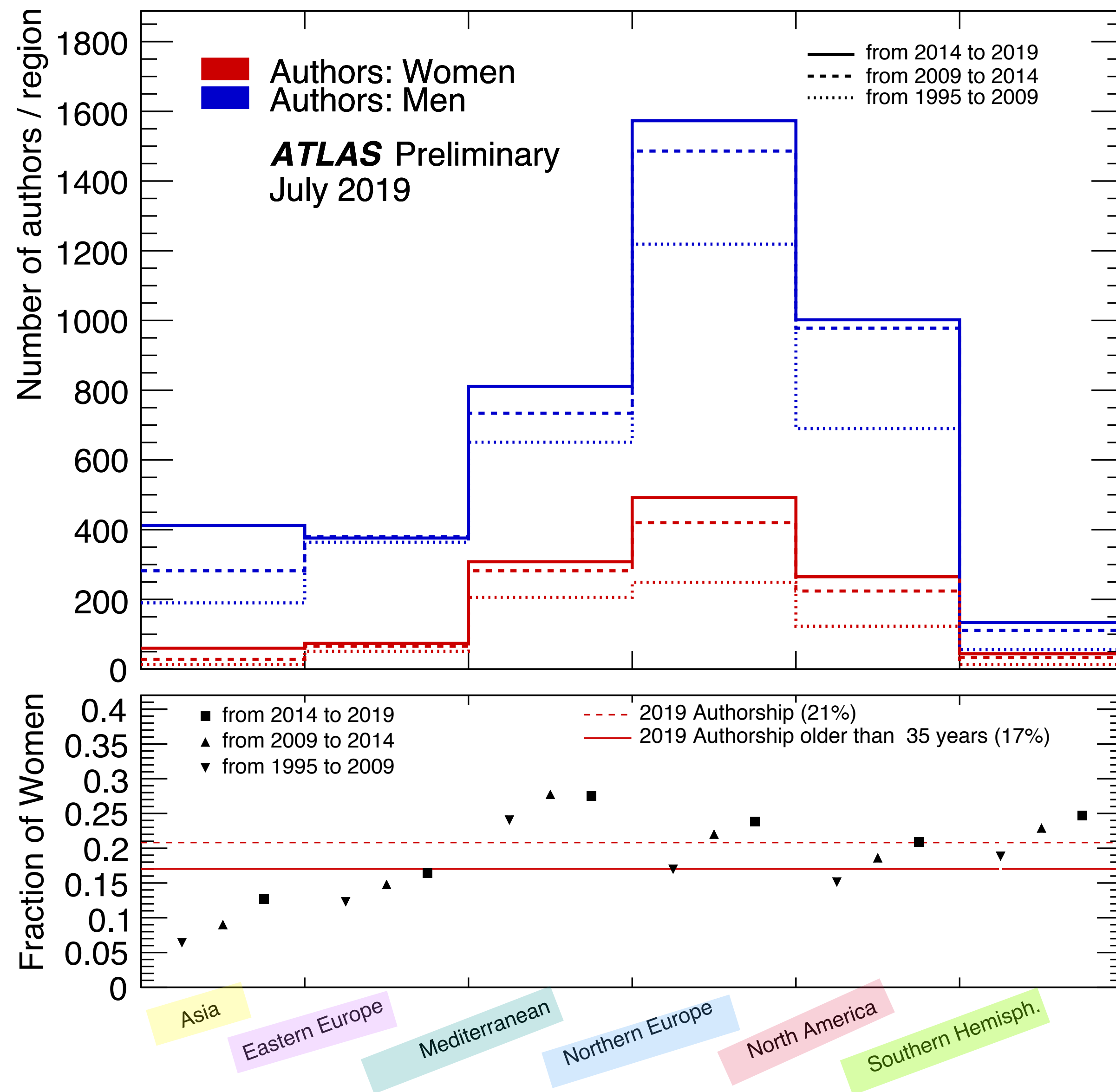
- Most of ATLAS members/authors are younger than 45.
- The collaboration is becoming **younger**.
- Overall, the **fraction of women members/authors is increasing**.

- 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**.



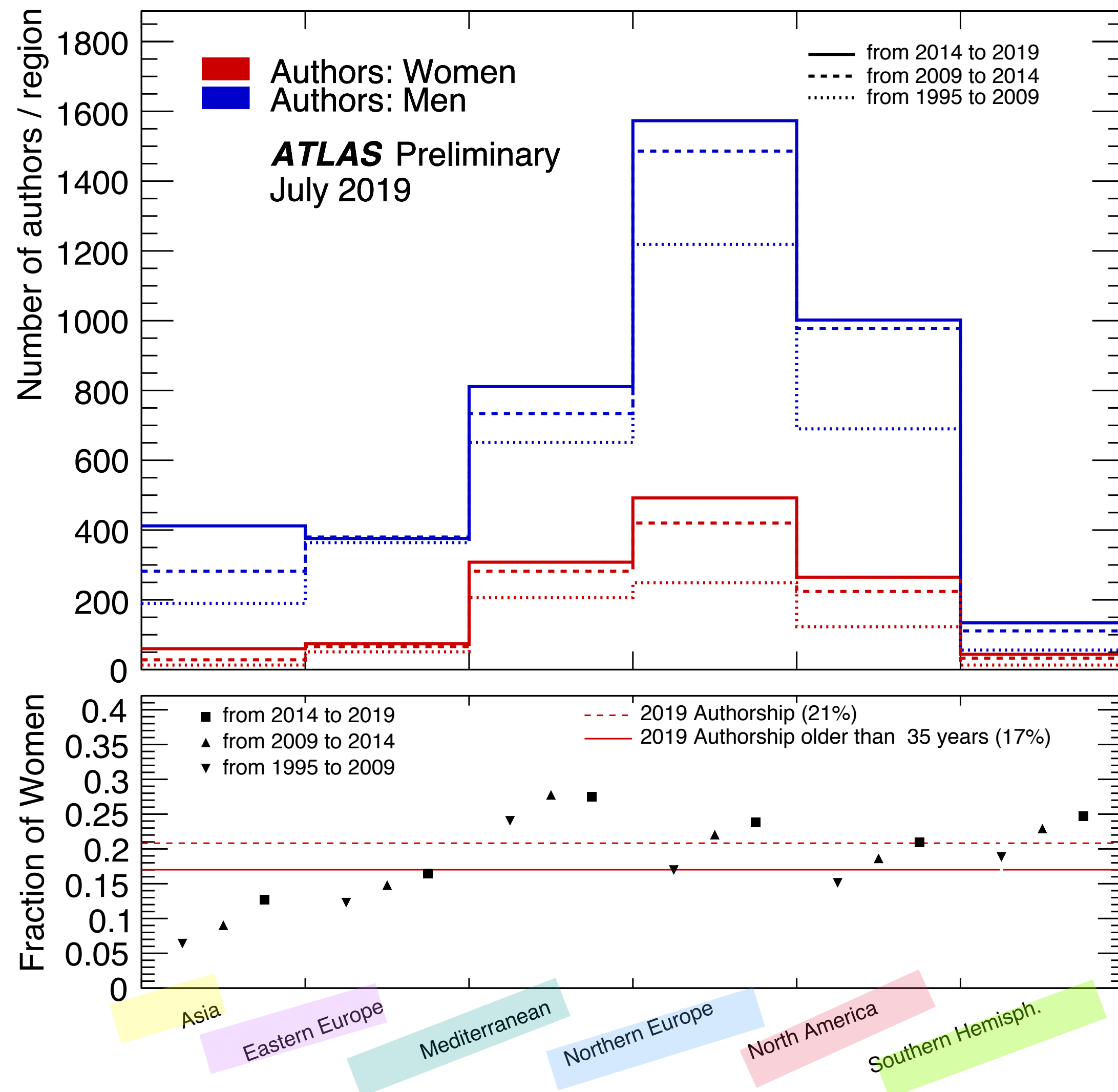
REGION

Home Institution



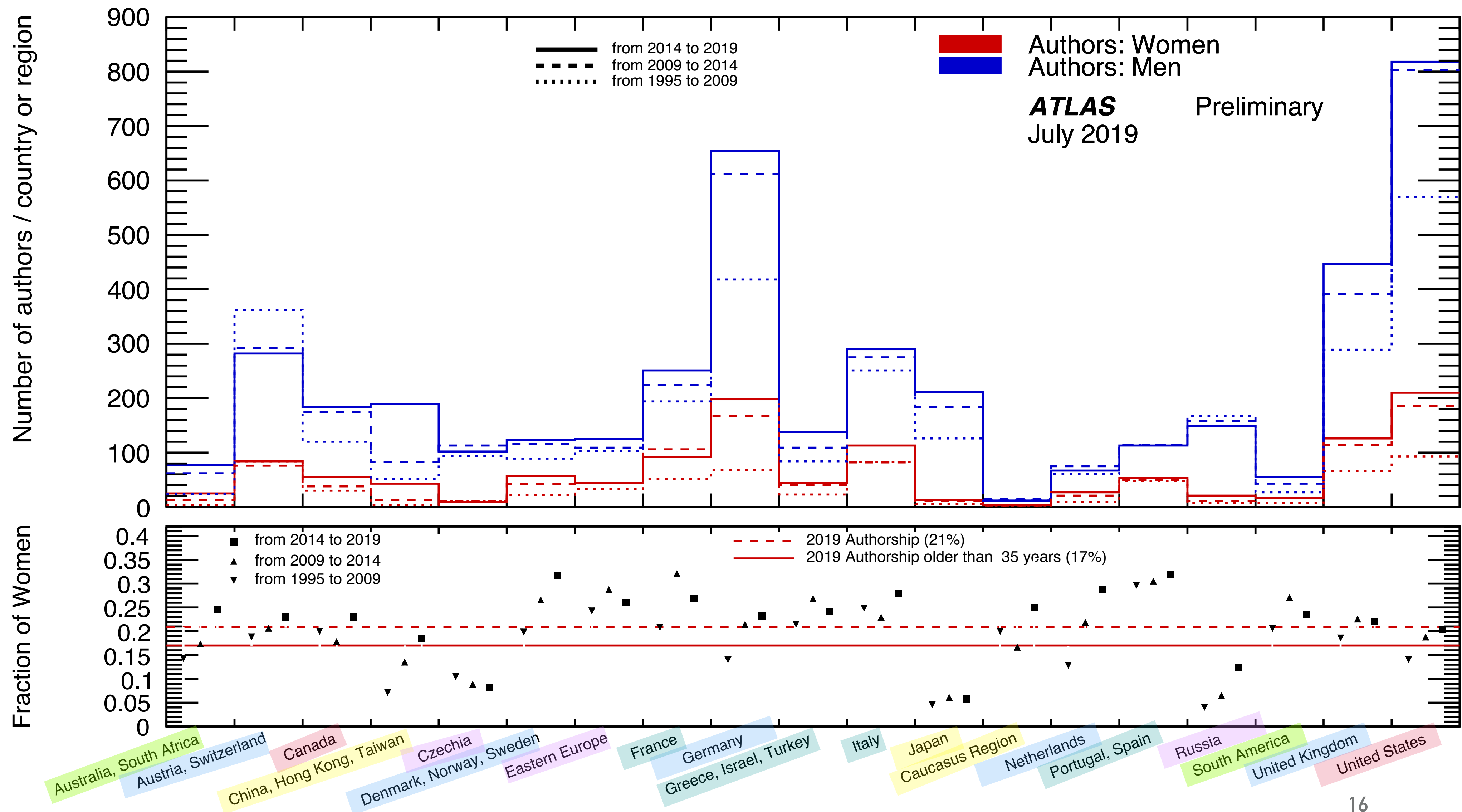
- **Asia:** Armenia, Azerbaijan, China, Georgia, Japan, Taiwan
- **Eastern Europe:** Belarus, Czechia, Poland, Romania, Russia (including JINR Dubna), Serbia, Slovakia, Slovenia
- **Mediterranean:** France, Greece, Israel, Italy, Portugal, Spain, Turkey, Morocco
- **North America:** Canada, USA
- **Northern Europe:** Austria, Denmark, Germany, the Netherlands, Norway, Sweden, Switzerland (including CERN), UK
- **Southern Hemisphere:** Argentina, Australia, Brazil, Chile, Colombia, South Africa

COMMENTS ON REGIONAL AUTHORSHIP



- 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.
- The mediterranean has been the region with the largest fraction of women authors in all three time periods.
- Asia is the region with the smallest fraction of women authors.

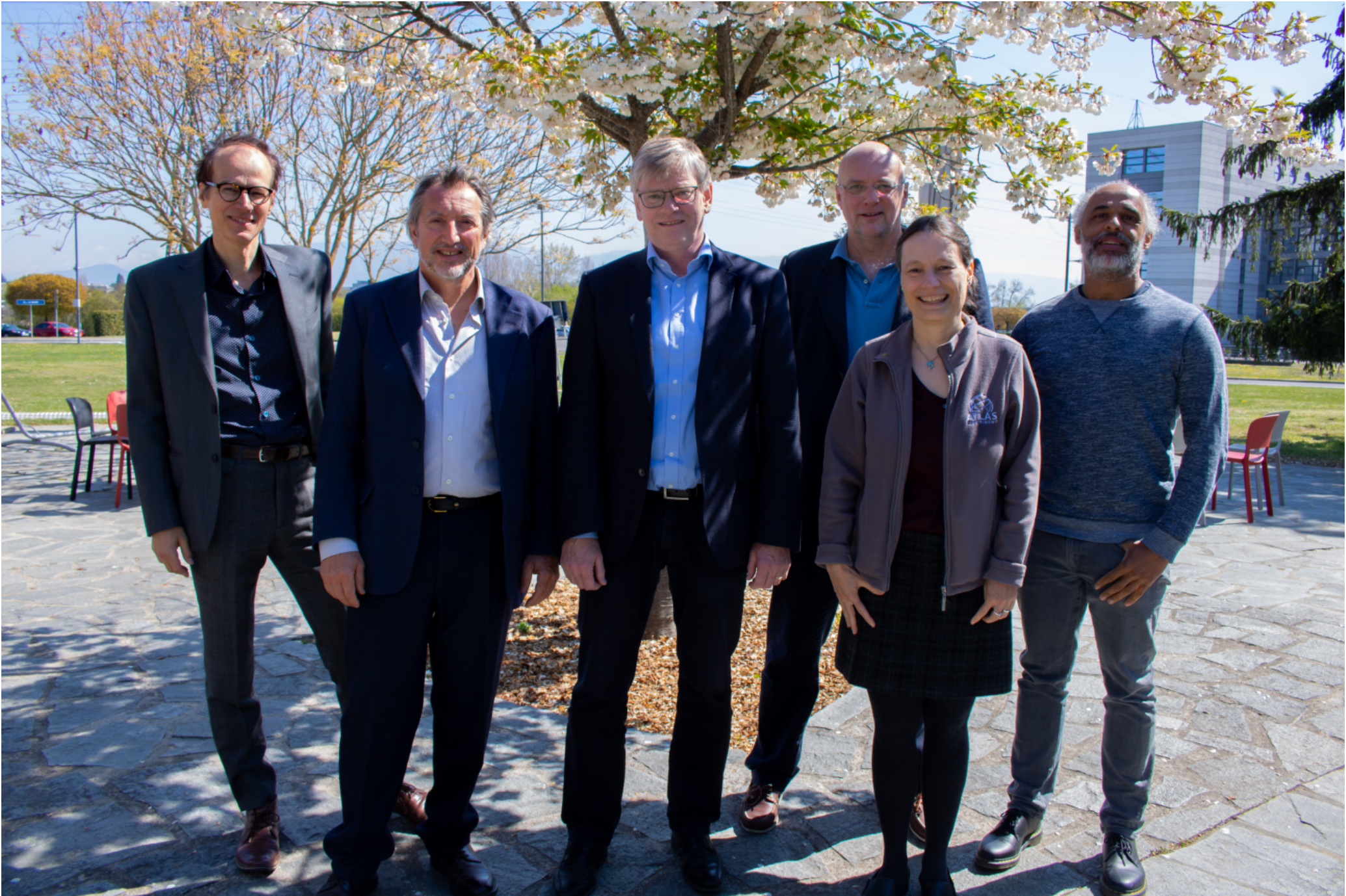
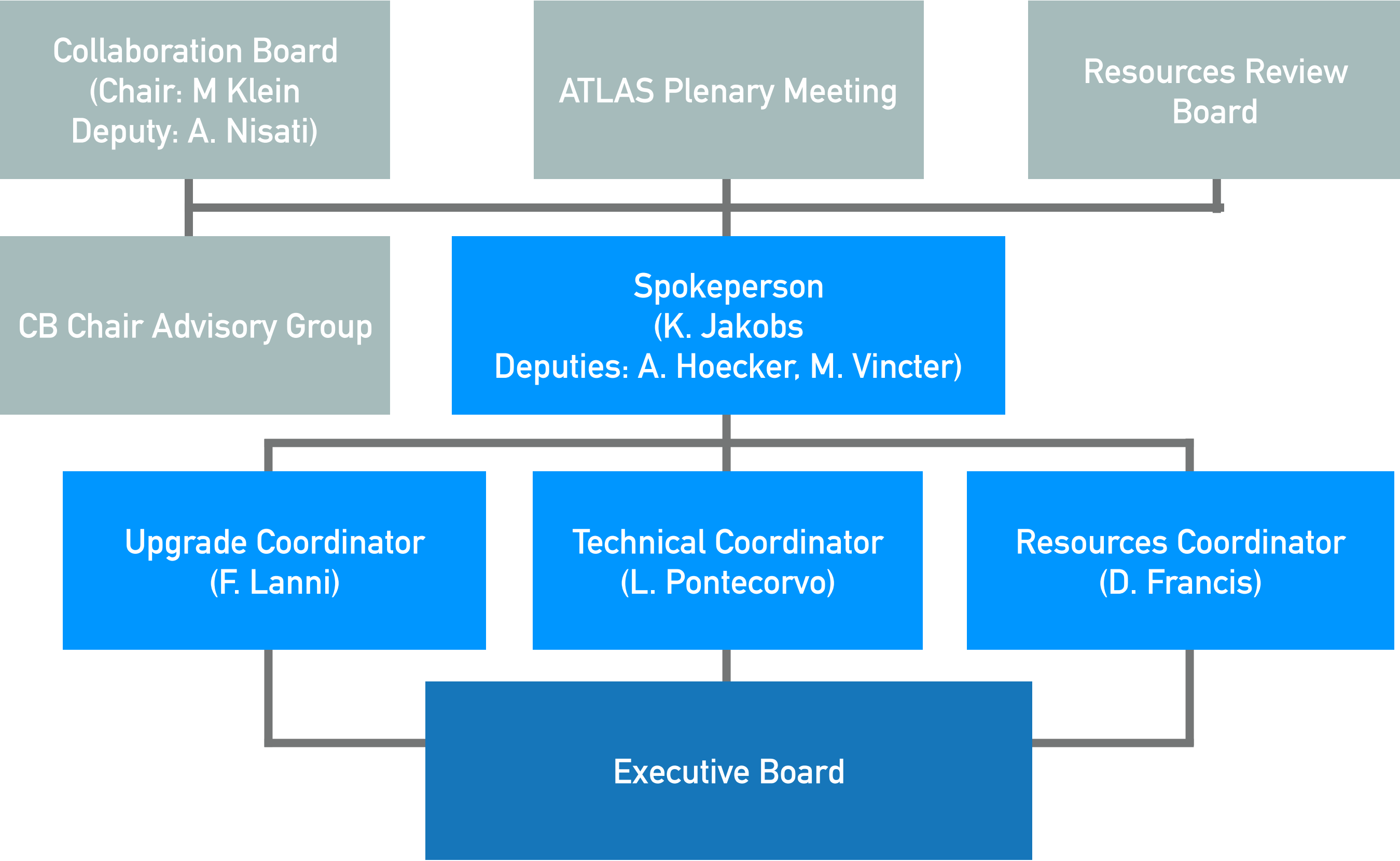
GEOGRAPHICAL BREAKDOWN OF AUTHORS



A woman with dark hair, wearing a blue blazer, is shown in profile from the chest up, standing at a wooden podium. She has her hands clasped in front of her. Two gooseneck microphones are positioned in front of her. The background is a blurred indoor setting with warm lighting and some greenery. A semi-transparent dark grey rectangular box is centered over the image, containing the word "LEADERSHIP" in large, white, bold, sans-serif capital letters.

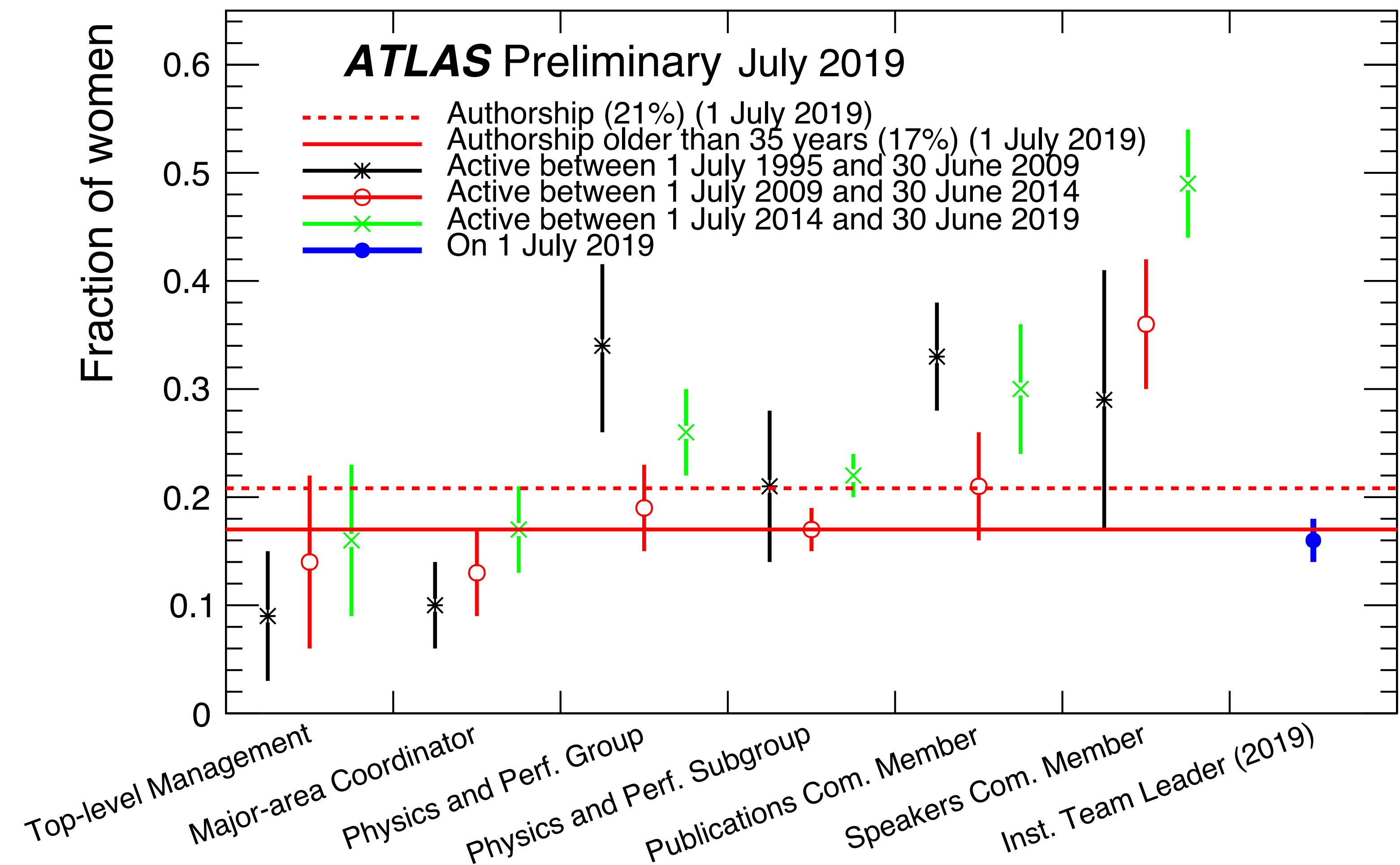
LEADERSHIP

TOP LEVEL MANAGEMENT



The management of the ATLAS experiment. From left to right: Andreas Hoecker (Deputy Spokesperson), Ludovico Pontecorvo (Technical Coordinator), Karl Jakobs (Spokesperson), Francesco Lanni (Upgrade Coordinator), Manuella Vinciter (Deputy Spokesperson) and David Francis (Resource Coordinator). (Image: E. Ward/ATLAS Collaboration)

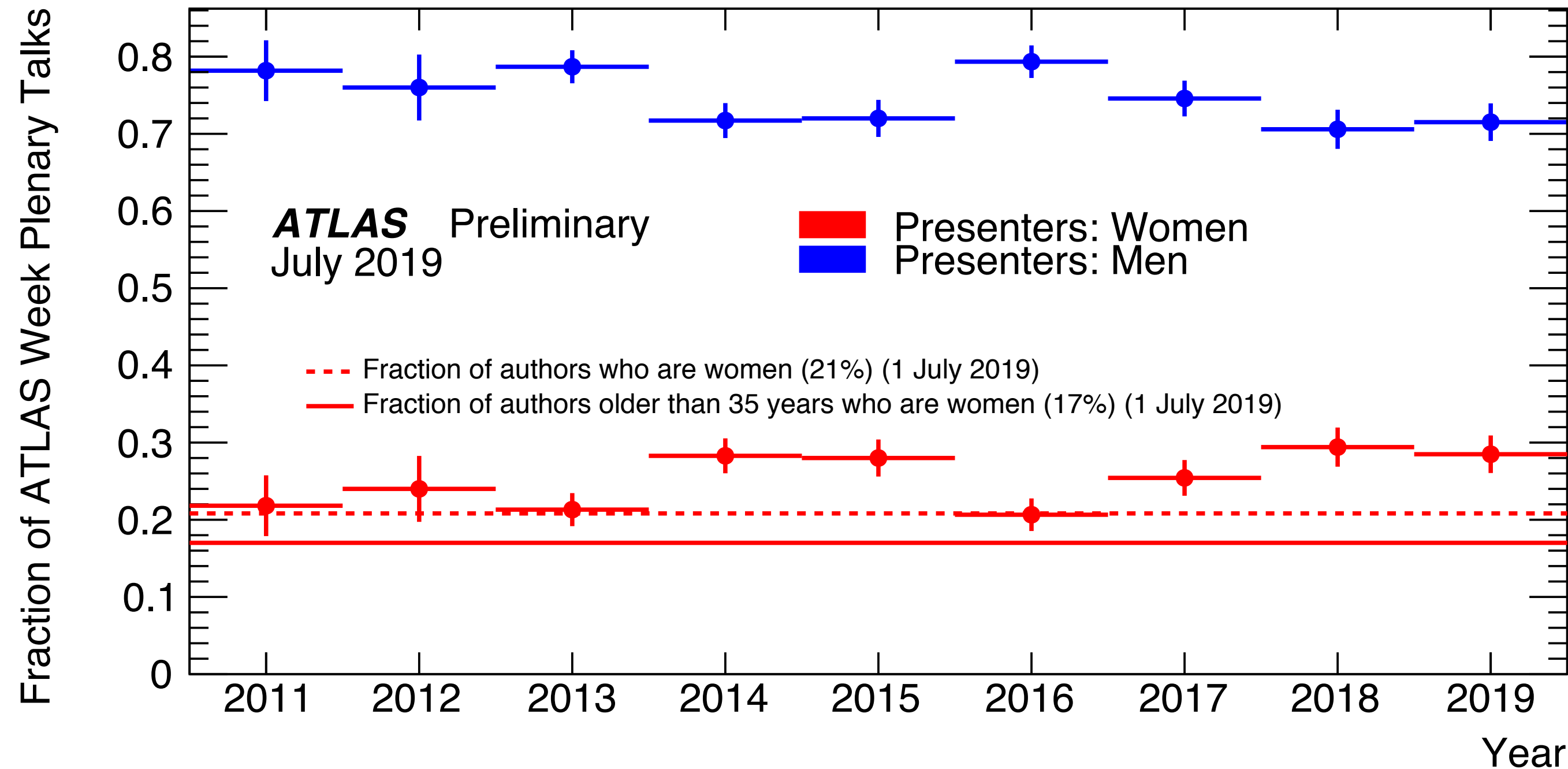
FRACTION OF WOMEN IN LEADERSHIP ROLES



- **Top level management:** spokesperson, 2 deputies, technical, resource, upgrade coordinator. 2y terms.
- **Major area coordinators:** ~16, 2y terms.
- **Physics and performance group:** 2 conveners per group (Combined Performance 6, Physics Analysis 12), 2y terms.
- **Physics and performance subgroup:** ~ 2 conveners per subgroup.
- **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



Because names of people in the calendar 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>

- ATLAS week takes place 3 x year.
- Fraction of contributions made by women is currently above fraction of women authors.

CLOSING REMARKS

- ATLAS is composed of members from over 90 **nationalities**, with ages spanning 5 decades.
 - **Fraction of women members** in the collaboration **decreases with age** and varies significantly among the different institute regions.
 - Currently , ~21% of its authors are women and ~17% of its authors over 35y are women.
- Some **regions** have shown considerable membership growth over the years the ATLAS collaboration has been active.
 - In parallel, almost all 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 over the last 5 years for all roles.

THANK YOU!