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

ANA MARIA RODRIGUEZ (YORK UNIVERSITY) FOR THE ATLAS COLLABORATION
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.*
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.
PROFESSIONS
ATLAS MEMBERS PROFESSION BREAKDOWN

- Undergrad/summer students: 6%
- Physics masters/diploma students: 8%
- Physics PhD Students: 21%
- Engineers w/o PhD: 10%
- Engineers w. PhD: 5%
- Technician or equivalent: 5%
- Admin/Others: 2%
- Engineering students: 1%
- Mostly STEM fields.

Physicists: 41%
AGE 11
• 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.
ATLAS Collaboration

183 institutions (232 individual institutes) from 38 countries

- **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

Number of authors / country or region

Fraction of Women

from 2014 to 2019
from 2009 to 2014
from 1995 to 2009

Authors: Women
Authors: Men

ATLAS
Preliminary
July 2019

Australia, South Africa
Austria, Switzerland
Canada
China, Hong Kong, Taiwan
Czechia
Denmark, Norway, Sweden
Eastern Europe
France
Germany
Greece, Israel, Turkey
Italy
Japan
Caucasus Region
Netherlands
Portugal, Spain
Russia
South America
United Kingdom
United States

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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 Vincter (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 takes place 3 x year.

Fraction of contributions made by women is currently above fraction of women authors.

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