



CERN Education and Outreach Programmes with South Africa

# CERN Outreach, Teacher Training, and Summer Student Programme

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# Education bridging the distance





## CERN collaborates on Physics Schools



- 1<sup>st</sup> ASP 2010 Stellenbosch
- 7<sup>th</sup> ASP 2022 Nelson Mandela Univ.

# Physics Schools



**NELSON MANDELA**  
UNIVERSITY

The 7th Biennial African School of  
Fundamental Physics and Applications

28 November - 9 December 2022



### Scientific Program

#### Topics

- Space Physics, Astrophysics & Cosmology
- Nuclear and Particle Physics
- Medical and Radiation Physics
- Biophysics
- Physics Education, Outreach, & Communication
- Diversity Equity & Inclusion in Physics
- Condensed and Material Physics
- Photonics
- Applied and Industrial Physics
- Theoretical and Computational Physics
- Physics for Sustainable Development
- 100 Years of Physics in Africa and the Future

#### Activities

- Workshops for High School Teachers
- Outreach for Secondary Schools
- Physics Lectures and Tutorials for Students
- Forums to Discuss Capacity Development & Retention

100 years of  
Physics in Africa  
Past, Present, And  
Future



Gqeberha (Formerly Port Elizabeth)







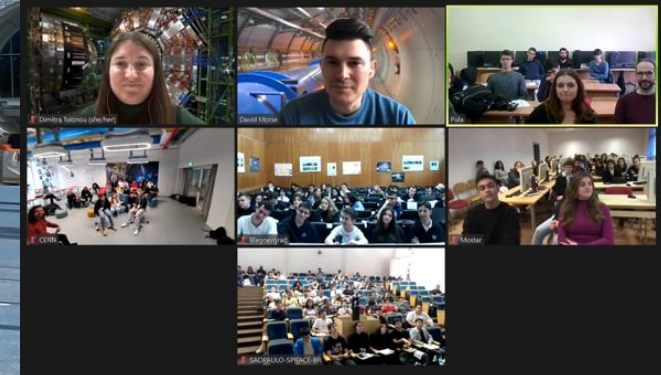
International Particle  
Physics Outreach Group

# INTERNATIONAL MASTERCLASSES HANDS ON PARTICLE PHYSICS

24.11.2024



Member  
joined 2016



# IPPOG





# Education bridging the distance







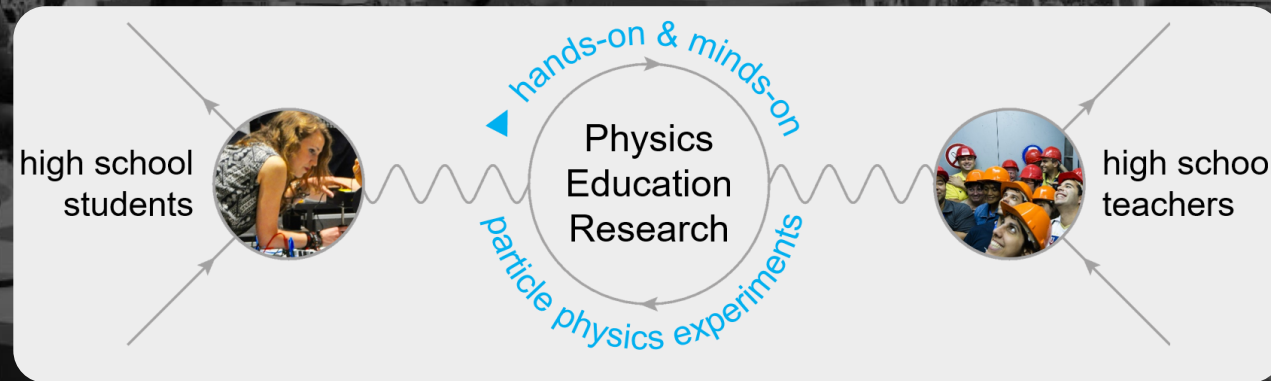
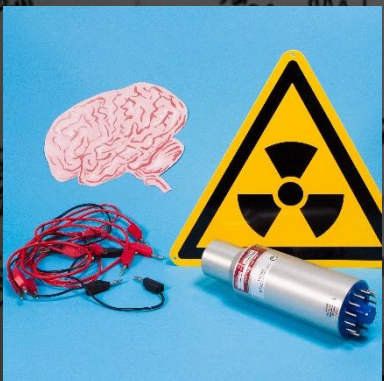
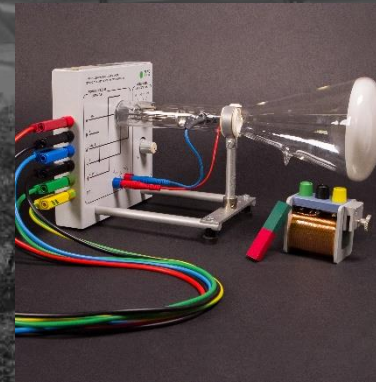
First visitor group from South Africa recorded in 2013

In total 89 groups with 1000 visitors since then





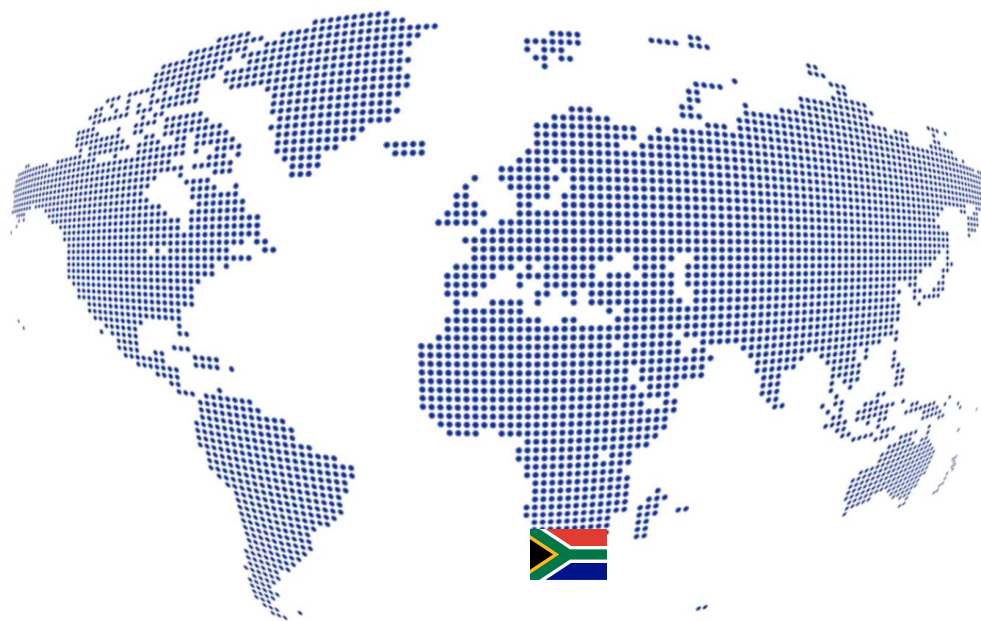
35 groups of South African students participated in hands-on workshops



Hands-on and Minds-on in the Labs



# Teacher Programmes Participants 1998-2024 (Total: 15 508)



South Africa

International Teacher  
Programmes

2001, 2007, 2008,  
2009, 2015, 2016,  
2019, 2023 (2), 2024

## Member States 12 368

Austria 346 – Belgium 157 – Bulgaria 951  
Czech Republic 224 – Denmark 387 – Estonia 131  
Finland 564 – France 536 – Germany 1219  
Greece 1094 – Hungary 599 – Israel 54 – Italy 1303  
Netherlands 257 – Norway 178 – Poland 629  
Portugal 537 – Romania 45 – Serbia 103  
Slovakia 311 – Spain 811 – Sweden 336  
Switzerland 136 – United Kingdom 1459

## Associate Member States in the pre-stage to Membership 73

Cyprus 16 – Slovenia 57

## Associate Member States 1357

Brazil 318 – Croatia 193 – India 20 – Latvia 106  
Lithuania 89 – Pakistan 14 – Türkiye 409  
Ukraine 208

## Observers 600

Japan 12 – Russia (suspended) 431  
United States of America 157

## Non-Member States and Territories 1110

Algeria 11 – Angola 15 – Argentina 3 – Armenia 19 – Australia 19 – Azerbaijan 2 – Bahrain 3 – Bangladesh 2 – Belarus 11  
Bhutan 1 – Bosnia & Herzegovina 37 – Burundi 2 – Cameroon 13 – Canada 26 – Cape Verde 6 – Chile 4 – Colombia 8  
Costa Rica 4 – Dominican Republic 73 – Ecuador 2 – Egypt 4 – Eswatini 1 – Ethiopia 1 – Georgia 232 – Ghana 7 – Guatemala 1  
Guinea Bissau 4 – Hong Kong 26 – Indonesia 6 – Iran 16 – Ireland 10 – Jordan 13 – Kazakhstan 14 – Kenya 4 – Kuwait 1  
Kyrgyzstan 2 – Lebanon 21 – Madagascar 2 – Malaysia 5 – Malta 52 – Mexico 165 – Moldova 4 – Mongolia 1 – Montenegro 19  
Morocco 2 – Mozambique 28 – Nepal 8 – New Zealand 6 – Nigeria 2 – North Macedonia 13 – Oman 1 – Palestine 5  
People's Republic of China 4 – Peru 1 – Philippines 9 – Qatar 1 – Republic of Korea 49 – Rwanda 20 – São Tomé and Príncipe 10  
Saudi Arabia 1 – Singapore 3 – South Africa 12 – Sri Lanka 4 – Taiwan 1 – Tajikistan 1 – Tanzania 2 – Thailand 27  
Timor-Leste 12 – Uganda 3 – United Arab Emirates 1 – Uruguay 4 – Uzbekistan 1 – Venezuela 1 – Vietnam 5 – Zimbabwe 1



# Teacher Programmes







# 11 teams from South Africa took part



# The CERN-Solvay Education Programme

A hybrid online / on-site programme for international high-school students

1. **DIY videos:** Discover **experiments** you can easily do at home or at school, connected to CERN's science or technology, posted on CERN's **social media** channels.
2. **Online physics course:** Go **beyond the high school curriculum** and learn about scientific topics CERN scientists and engineers use every day, with self-graded questions, on the CERN-Solvay Education Programme **website**.
3. **Student camps:** Stay at **CERN** for a week with 30 high school students from all over the world who have completed the online course. Perform **research** projects, **visit** accelerators and detectors, attend **lectures** and explore STEM **careers**!

We would love to have South African students in the programme 😊



[cern.ch/solvay-education](https://cern.ch/solvay-education)

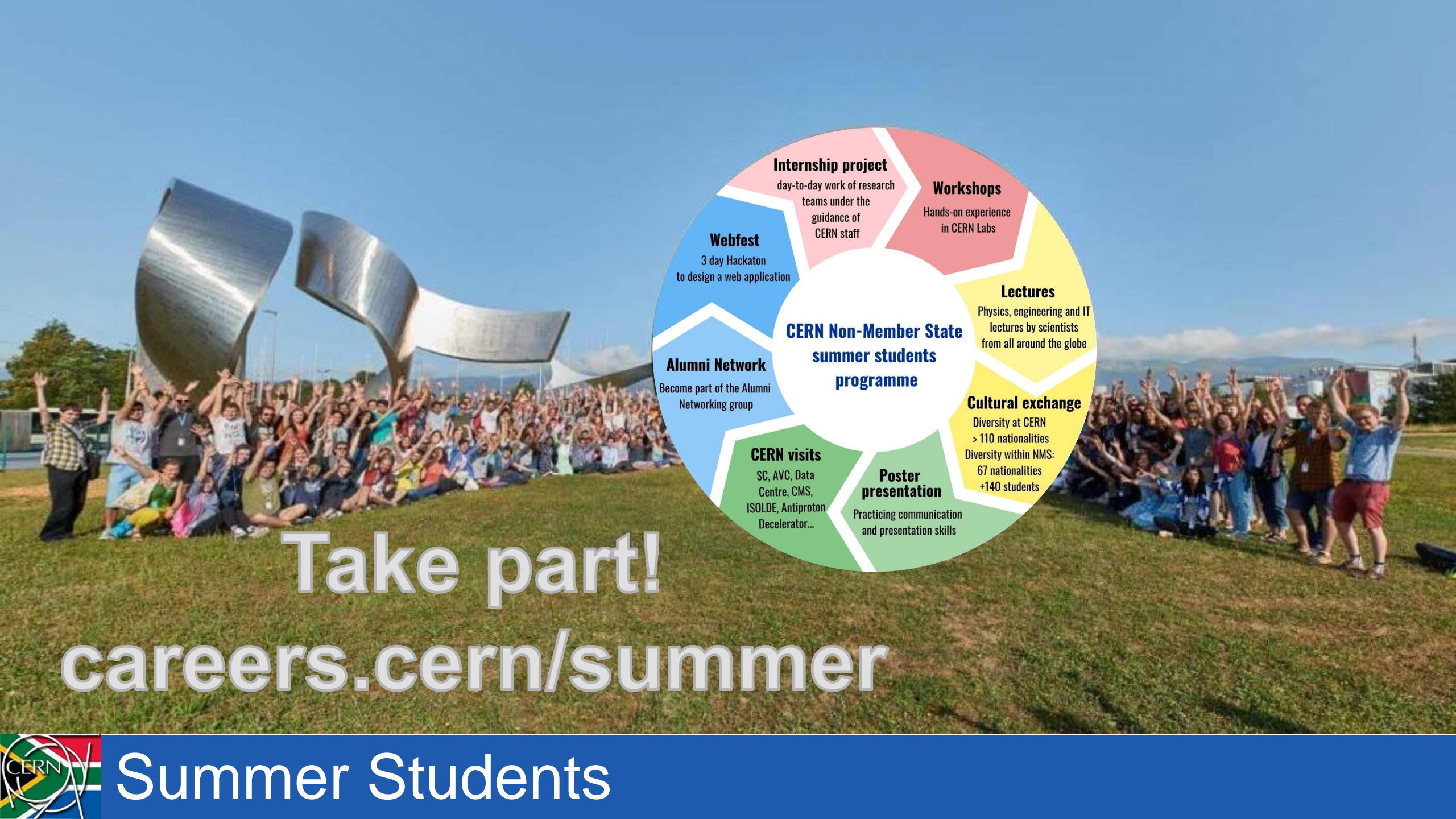


[youtube.com/CERN](https://youtube.com/CERN)



[solvay.education.programme@cern.ch](mailto:solvay.education.programme@cern.ch)





Take part!

[careers.cern/summer](https://careers.cern/summer)



Summer Students