

Faculty of Science

**The 3rd biennial African Conference on Fundamental
Physics and Applications, ACP2023**

100 years of Physics in Africa: Past, Present, and Future.

The Seventh edition of the African School of Fundamental Physics and Applications, ASP2022, was a resounding success, marking a significant milestone in its mission to advance physics education and research in Africa. This biennial event, hosted at Nelson Mandela University in Gqeberha, South Africa, brought together a diverse group of participants, including 231 high school students, 76 high school teachers, and 191 university students, supported by dedicated lecturers and organisers. The program's comprehensive approach encompassed various aspects of physics, from fundamental to applied, addressing critical areas like nuclear physics, particle physics, medical physics, astrophysics, and more.

The scientific program was arranged in three distinct components for university students, high school teachers and high school pupils. The program for university students was set up for the entire duration of the school, from 28 November to 9 December 2022. The program for high school teachers was in parallel to the students' program, with some lectures in parallel, during the period of 28 November – 2 December 2022. During the week of December 5 – 9, 2022, we organized an outreach event for high school pupils, in parallel to the students' program.

One of the key highlights of ASP2022 was its ability to adapt to challenging circumstances, as it was held as a hybrid event in response to the ongoing COVID-19 pandemic. This flexibility allowed both in-person and online participation, ensuring that the program reached a broader audience. The event's success was further emphasized by the positive feedback received from participants, who appreciated the



diverse range of lectures, hands-on experiments, and the opportunity to engage with physicists from Africa and beyond. The ASP2022 program also included a crucial forum for discussions with policymakers, focusing on the sustainability of the African School of Physics and the retention of African physics graduates and faculties. Overall, ASP2022's achievements serve as a testament to the program's commitment to advancing physics education and research in Africa.

After a successful ASP2022, the Faculty of Science will be hosting the 3rd African Conference of Fundamental and Applied Physics, ACP2023. This will be a hybrid conference, with participants in-person (George) and others participating and presenting virtually, both oral and poster presentations via Gather.Town. The conference is organised jointly by the African School of Physics (ASP) and Nelson Mandela University at George Campus, in George, South Africa, on 25 – 29 September 2023. ACP2023 is an international and professional conference opened to physicists, physics teachers, and policymakers in education and research from all over Africa and beyond.

The ACP2023 scientific program includes invited plenary talks, contributed oral presentations, contributed poster presentations, and discussion in:

- Particles and related applications: particle accelerators, detectors and instrumentation, computing, particle physics, nuclear physics, medical, fluid and plasma physics, complex systems;
- Light sources and applications: light sources, condensed matter and materials physics, atomic and molecular physics, laser physics;
- Physics engagements: physics education, early career physicists, women in physics, community engagement.

Find the scientific schedule/program here:

<https://indico.cern.ch/event/1229551/timetable/#20230925>

Find the book of abstracts here:

<https://indico.cern.ch/event/1229551/book-of-abstracts.pdf>



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Main topics:

- Nuclear Physics;
- High Energy Physics;
- Astrophysics and Cosmology;
- Accelerators, Radiation and Medical Physics;
- Materials Physics, Nanoscience, Artificial Intelligence, Machine Learning;
- Biophysics, Fluid and Plasma Physics, Atomic & Molecular Physics;
- Light Sources and Neutron Sources;
- Earth Science, Optics & Photonics, Complex Systems;
- Physics Education, the Internet of things, Quantum Physics;
- Renewable Energies and Energy Efficiency;
- Statistical Analysis, Heavy Ion Physics;
- Young Physicists Forum, Women in Physics Forum;
- Community Engagement.

Some of the highlights of the conference include Renewable energies & Energy Efficiency, Science Diplomacy, Physics & Climate Change, Early Career African Physicists, Big detectors & large research infrastructures in Africa and African countries joining and thriving in large international collaborations.

Social Media Hashtags:

Use the following hashtags to popularise the event you will be attending and spread the word, to your followers.

#ACP2023

#MandelaScience

#MandelaUni

#ACP2023_MandelaUni



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