WORKSHOP
Quantum Science and Technology across Africa

BACKGROUND

The year 2025 has been proclaimed as the International Year of Quantum Science and Technology (QST) by the United Nations.[1] Quantum Science and Technology promises considerable opportunities to impact upon various aspects of our rapidly developing societies, from industry and economy, over climate and energy, to health, well being, and security.[2,3]

If a sustainable effort is to be made for young African societies to play a truly autonomous role in exploiting these promises for their own purposes of growth and development driven by – internationally competitive – technological innovation, then a stable network between key players across the African continent and reliable partner institutions abroad will make a difference.

We therefore set out to hold a small-scale, dedicated networking meeting in Scottsburgh near Durban, South Africa, from 23 - 27 June 2025, with the aim to bring together scientists, representatives of learned societies, and funding bodies, who are all dedicated to fostering an autonomous African research strategy and agenda in QST. For the purpose of a focused strategy meeting, we aim at 22 speakers (including seven representatives from Germany), and will also admit approximately 30 junior participants to actively partake in round table/fishbowl formats and poster sessions. Three junior participants will be selected to present their work as oral presentations.

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Centre for Quantum Computing & Technology

SA QuTI South African Quantum Technology Initiative

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While QST initiatives emerge in various countries on the African continent, they appear little interconnected, and have a hitherto rather limited substantial underpinning, in particular in terms of experimental research, which is due to the very variable availability of long-term funding and infrastructures across the continent. Furthermore, while demographically a very young continent, and therefore enormously rich in terms of human resources, the potential of a well orchestrated, pan-African scientific discourse between students and young researchers is far from being exploited.

Institutions like the International Centre for Theoretical Physics (ICTP) and the African Institute of Mathematical Sciences (AIMS) have been consistently contributing to establishing the bases for such discourse for many years, though across the entire portfolio of the physical and mathematical sciences.

We believe that IYQ25 and QST define an ideal nucleus for a more densely woven network which allows African scientists to foster their research interests and needs across the continent, which is ever more indispensable given the very variable boundary conditions.

1. https://quantum2025.org
2. https://quantum2025.org/en/about/
3. https://www.foreignaffairs.com/united-states/race-lead-quantum-future-chou-manyika-neven

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AIMS OF THE SEMINAR AND TARGET AUDIENCE

- to bring together leading researchers and experienced research administrators with documented commitment to QST, from across the African continent, and from DPG, WEH and ICTP;

- to map out the existing QST higher education and research landscape across the continent;

- to map out existing interfaces between QST research and industrial use-cases, to the benefit of African economies;

The workshop will furthermore run two poster sessions and offer one public evening lecture, to showcase current QST research across the continent, and exemplary examples of QST research & strategies in the Federal Republic of Germany.

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