

NITheCS Colloquium

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National Institute for Theoretical and Computational Sciences

Building an Ecosystem for Radio Astronomy Discoveries: MeerKAT Science, IDIA and the Road to the SKAO Era

Prof Roger Deane

(Inter-University Institute for Data Intensive Astronomy (IDIA), University of Cape Town, University of Pretoria)

Monday, 23 November 2026 | 16h00–17h00 SAST

HOW TO ATTEND:

In person (main venue):

- Road House Cinema (Neelsie)
  Stellenbosch University

Watch at satellite venues:

- MITP Boardroom P215, 2nd Floor Physics Building
  University of the Witwatersrand
- Seminar Room K310
  Physics Building G5
  North-West University

Online (live stream)

--- Please note, a recording of the lecture will be published on the NITheCS YouTube channel following the event ---

ABSTRACT

Since its inauguration in July 2018, SARAO's MeerKAT telescope has made South Africa a world leader in radio astronomy. However, in this data-driven era, a radio telescope alone does not produce discoveries – it takes an ecosystem of researchers, support staff, computing, software, and visualisation tools. The partnership of the Inter-University Institute for Data Intensive Astronomy (IDIA) has helped build the South African radio astronomy community to now deliver high-impact science with MeerKAT.

I will describe several of MeerKAT's headline results, from cosmology and galaxy evolution to black holes and transients, and show how IDIA's computational infrastructure and support team enable them. I will show how cosmological simulations hosted alongside the data bring theory and observation together, and how we are preparing for AI's continued transformation of astronomy. I will close with the promise and challenges the future MeerKAT expansion (MeerKAT+) and the SKA Observatory era will bring, and the opportunities these open for new partners across disciplines.

BIOGRAPHY

Roger Deane is Professor of Astronomy at the University of Cape Town and Director of the Inter-University Institute for Data Intensive Astronomy.

He obtained his doctorate in Astrophysics from the University of Oxford in 2012. Between 2018-2025, he established the Radio Astronomy Research Group at the University of Pretoria and held the DSTI/NRF SKA Chair in Radio Astronomy at the University of the Witwatersrand, where he also served as Director of the Wits Centre for Astrophysics. His research focuses on the cosmic evolution of galaxies and their supermassive black holes, using radio telescopes and advanced computational techniques.

He is an active member of several large international collaborations, particularly those associated with the multi-billion-dollar SKA Observatory, leads the MeerKAT-South Pole Telescope survey, and has chaired the MeerKAT Proposal Review Panel since 2020. He was also part of the global team that captured the first image of a black hole in 2019 and led the R70-million fundraising and communications campaign for the Wits Planetarium (2020-2022). In 2023, he received the NSTF-South32 Communication Award.



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