



Postdoctoral Fellowship in the High Energy Physics, Cosmology & Astrophysics Theory (HEPCAT) group at the University of Cape Town (UCT)

The High Energy Physics, Cosmology & Astrophysics Theory (HEPCAT) group in the Department of Mathematics and Applied Mathematics at the University of Cape Town (UCT) invites applications for a Postdoctoral Fellowship starting in 2027. The HEPCAT group was established in 2019 around the South African Research Chair in Physical Cosmology held by Amanda Weltman. Group members conduct research on a wide range of theoretical physics, cosmology and astrophysics problems, with a particular focus on bridging observation and theory.

For more information on the activities of the HEPCAT group, see <https://www.hepcat.co.za>. Our faculty members include Amanda Weltman, Marisa Geyer, Shajid Haque, Jeff Murugan and Jonathan Shock. We have active involvement in MeerKAT Large Survey Projects (LSPs), the MeerKAT Pulsar Timing Array project and other pulsar focused MeerKAT Open Time projects, the HIRAX experiment and IAXO at CERN. There are additional opportunities to perform joint work across all group research areas, including astrophysics, machine learning and theoretical cosmology more broadly. There will also be opportunities to join external collaborations, including work on MeerKAT, IAXO, the SKA and the HIRAX experiment.

We will consider candidates with a range of interests related to cosmology, gravity and high energy theory, with an emphasis on research within Fast Radio Burst cosmology/astrophysics, intensity mapping, multi-messenger astrophysics, pulsar timing arrays, transient science, effective field theory, gravitational waves, chameleon gravity and using Machine Learning techniques in physics and astrophysics. Applicants must have a track record of accomplishment and independence in their research.

The appointment must comply with the University's approved policies, procedures and practices for the postdoctoral sector, and is subject to the rules and approval of the University of Cape Town and the National Research Foundation of South Africa.

The appointment is for two years at the outset, with a possible extension of one year subject to satisfactory progress and NRF approval. A PhD in Physics, Applied Mathematics or Astronomy is required. Postdoctoral experience is a bonus however the candidate needs to be within 5 years from the date of PhD at the start of the position and may not have held a full-time permanent academic or professional post. The successful applicant will be required to register as a Postdoctoral Research Fellow at the University of Cape Town.

Cape Town is an extremely beautiful city, surrounded by natural beauty. With beaches, mountains and forests only a short distance from the city centre and campus, Cape Town offers a perfectly balanced lifestyle. It is a particularly wonderful place to live if you enjoy outdoor activities. The city offers a wonderfully cosmopolitan atmosphere at a relatively low cost of living. The postdoc funding level is R400 000 per annum, tax free. Additional support is available for equipment and travel funding as appropriate.

Interested candidates should send a CV, a research proposal (2-3 pages), and arrange for three letters of recommendation to be sent to melissa.largier@uct.ac.za. Please use the following format in the subject line: YOURNAME, Postdoc 2027. The closing date for applications is **31 August 2026**. Screening of candidates will start in September 2026 and will continue until the position is filled. Any queries can be sent to Melissa at melissa.largier@uct.ac.za.

The University of Cape Town reserves the right to:

- *disqualify ineligible, incomplete and/or inappropriate applications*
- *change the conditions of award or to make no awards at all*