

Brown University
Department of Physics
Postdoctoral Research Associate in Particle Astrophysics

The Particle Astrophysics Group in the Department of Physics at Brown University will have an opening for a postdoctoral research associate starting July 1, 2023 or earlier if desired. Timing can be negotiated. The position will involve working on the LUX ZEPLIN (LZ) dark matter search experiment and also on new photodetector development or on the applications of machine learning in physics data analysis.

Details of the research programs and the members of the Brown Particle Astrophysics Group are shown at <https://particleastro.brown.edu>. The group is led by Prof. Rick Gaitskell and is focused on experimental searches for dark matter. Brown is a major group in the world-leading LZ 8-tonne liquid xenon TPC direct detection experiment that is currently operating underground at Sanford Lab. Detector operations and follow-up data analysis are expected to extend into 2027.

The research will include dark matter search data analysis, nuclear recoil detector calibration techniques including the use of a deuterium-deuterium accelerator source, photodetector development for next-generation experiments, and also machine learning applied in a range of physics analyses. Previous experience with noble liquid detectors, direct dark matter search experiments, photodetectors, low-background techniques, data analysis, machine learning, or Monte Carlo simulations (GEANT4) will be advantageous. We are also looking at developing future small/fast satellite missions in particle astrophysics. There are no teaching responsibilities associated with this position.

The Brown University Department has a very active program in experimental and theoretical Astrophysics, Particle Astrophysics, Cosmology, and Particle Physics.

Initial offers will be made for one year, with the potential for renewal for a further two years. The successful applicant must have completed the requirements for a Ph.D. or equivalent qualification in physics, astrophysics, computer science, or a related discipline prior to the start of the appointment. Interested candidates should submit the following application materials:

- Curriculum vitae.
- Statement of research interests. The statement of research interests should not exceed 3 pages, excluding the bibliography.
- Three letters of recommendation submitted prior to the application deadline.

Applications should be submitted by **Dec 16, 2022 for full consideration**, although review of applications will continue on a rolling basis until the position is filled. Any inquiries should be

sent to Particleastro_postdoc@brown.edu. Submission is made online using <http://apply.interfolio.com/116965>.

Applicants should state in their cover letter how, through their research approaches and/or public engagement, they are prepared to advance Brown's strong commitment to diversity, equity, and inclusion.

Brown University seeks to recruit and retain a diverse workforce to maintain the excellence of the University and to offer our students richly varied disciplines, perspectives, viewpoints, and ways of knowing and learning.

Brown University is committed to fostering a diverse and inclusive academic global community; as an EEO/AA employer, Brown considers applicants for employment without regard to, and does not discriminate on the basis of, gender, sex, sexual orientation, gender identity, national origin, age, race, protected veteran status, disability, or any other legally protected status.

