



Call for a PhD position
Applications are open now

Cluster of Excellence
OUR DYNAMIC UNIVERSE
<https://dynaverse.astro.uni-koeln.de>

A Multi-Wavelength Analysis of Cosmic Reionization

Project:

Recent studies with the James Webb Space Telescope (JWST) have revealed the existence of luminous star-forming galaxies up to redshifts of 14, proving that photons to ionize the universe were already plentiful only 300 million years after the Big Bang. We thus know that the epoch of cosmic reionization stretched out at least for 700 million years, resulting in a virtually fully ionized universe by a cosmic age of one billion years. Yet, it still remains poorly understood how reionization progressed over this period, and across different cosmic environments.

Goals:

This project focuses on the exploitation of new and upcoming datasets from the CCAT/FYST telescope, the SKA, and complementary facilities to understand the dynamical evolution of cosmic reionization based on cutting-edge empirical data to be taken starting in 2026, coupled with modern methods in astrostatistics, AI, and machine learning. The successful candidate will also have the opportunity to participate in large international collaborations as part of their research efforts.

Requirements:

- Experience with programming, e.g., in the python language.
- Experience with telescope data analysis.
- Experience with statistical analysis.
- Experience with machine learning tools.
- Scientific writing skills.

Offer:

Please use the contact information to know more details.

Dynaverse welcome applications from people with diverse backgrounds, e.g. in terms of age, gender, disability, sexual orientation / identity, and social, ethnic and religious origin. A diverse and inclusive working environment with equal opportunities in which everyone can realize their potential is important to us.

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