PhD positions in Physics

The Cluster of Excellence PRISMA+ offers **several PhD positions** for outstanding graduates in an attractive and international research environment.

PRISMA+ addresses the basic questions about the nature of the fundamental building blocks of matter and their importance for the physics of the universe. PRISMA+ consists of renowned research groups in the areas of particle, low-energy and hadron physics. Conducting various new key experiments to study fundamental forces and the limits of the Standard Model is one of the main initiatives of the Cluster.

The selected candidates will get a **funding contract** as well as **individual travel and research funds**. They can participate in all MPA activities, including lecture courses, seminars, retreats, summer schools, workshops and social events.

We offer the following PhD topics (for a description of the research groups and topics, please visit https://www.prisma.uni-mainz.de/mainz-physics-academy/phd-fellowship-programme/):

- Searches for ultralight bosonic fields (Prof. Dr. Dmitry Budker)
- Novel techniques in magnetometry and magnetic resonance (Prof. Dr. Dmitry Budker)
- NA62 experiment: Search for New Physics in rare and ultra-rare Kaon decays (Dr. Rainer Wanke)
- SHiP experiment: Calorimeter development and construction (Prof. Dr. Volker Büscher)
- Development of Project 8's atomic tritium source (Prof. Dr. Sebastian Böser, Prof. Dr. Martin Fertl)
- Determination of the free neutron lifetime with the tSPECT experiment (Prof. Dr. Martin Fertl)
- High energy physics with the ATLAS experiment at the LHC (Prof. Dr. Lucia Masetti, Prof. Dr. Volker Büscher, Prof. Dr. Stefan Tapprogge)
- Experimental neutrino physics at DUNE (Prof. Dr. Alfons Weber)
- Effective Field Theory for Non-Global Observables at Hadron Colliders (Prof. Dr. Matthias Neubert)
- Precision calculations and Feynman integrals (Prof. Dr. Stefan Weinzierl)
- Nuclear reactions involving halo nuclei (Prof. Dr. Pierre Capel)
- Electron-induced dissociation of nuclei applied to astrophysical reactions (Prof. Dr. Pierre Capel)
- Eikonal description of reactions involving exotic nuclei (Prof. Dr. Pierre Capel)
- Precision calculations for the muon anomalous magnetic moment from lattice QCD (Prof. Dr. Hartmut Wittig)

Applicants must demonstrate outstanding performance in their studies and are expected to hold or obtain a Masters' degree in physics, preferably in the areas of particle, low-energy and hadron physics.

Applications should include:
- Detailed curriculum vitae
- Cover letter including a short motivation statement
- Scans of university degrees including transcripts of records (lists of courses and grades) in German or English
- Candidates who have obtained their degrees from a university where English is not one of the teaching languages must prove their language proficiency (B2 level or higher) by a certificate not older than three years.

Please fill in the application form at https://www.prisma.uni-mainz.de/mainz-physics-academy/phd-fellowship-programme/application-form-phd-fellowship-mpa/ and send your complete application documents as a single pdf file to **mpa@uni-mainz.de** before **April 30th, 2024**.

Please arrange for two signed letters of recommendation by senior scientists, with institutional letterhead, to be emailed separately to the above address. Referees are also asked to submit the completed referee form from www.prisma.uni-mainz.de/mpa/phd-fellowship-programme.

All certificates may be submitted in English or German. Documents in any other language must be translated and legally certified by the German embassy, consulate, or a certified translator.

Further information can be obtained from the coordinators of the Mainz Physics Academy, Victoria Durant and Freya Luberg (mpa@uni-mainz.de).