Max-Planck-Institut für Physik
(Werner-Heisenberg-Institut)

The Max Planck Institute for Physics invites applications for a

Physicist or Engineering position

focused on R&D in connection with the strong superconducting dipole magnet required for the MADMAX Dark Matter Axion search experiment.

Axions are prime candidates to explain the Dark Matter problem of the universe. Their existence is independently predicted by Peccei Quinn (PQ) symmetry breaking to explain the strong CP problem. MADMAX is a new experimental approach to search for Dark Matter axions with a mass around 100 μeV, a mass range favoured by a class of theoretical models. The new approach makes use of the idea of a mirror in connection with dielectric layers inside a strong magnetic field, boosting the axion to photon conversion to a detectable rate. The required dipole magnet with figure of merit ~100 T^2m^2 is unique and presently being designed by two innovation partners. It is expected that a first demonstrator coil will be built and tested within the next three years.

The successful candidate is expected to take over a leading role in the development of the magnet design the follow up of superconductor production and testing as well as production and test of the first demonstrator coil in close cooperation with DESY experts, the innovation partners and the MADMAX collaboration partners. The main place of work for this position is at DESY in Hamburg.

Formal requirements for this position are a master in experimental physics, engineering or equivalent. A PhD is of advantage. The candidate ideally has a strong background in superconducting magnet design, cryogenic engineering and finite element calculations. A good knowledge of RF technologies, (astro-)particle physics and/or as well as in programming with C++, Root are an advantage.

Salary and benefits are commensurate with public service organizations (TVöD). The contract is initially limited to 3 years with the possibility of an extension. The Max Planck Society is committed to increasing the number of individuals with disabilities in its workforce and therefore encourages applications from such qualified individuals. Furthermore, the Max Planck Society seeks to increase the number of women in those areas where they are underrepresented and therefore explicitly encourages women to apply.

Interested applicants should submit an application letter, a statement of research interests, a curriculum vitae, a list of publications, and arrange for three letters of support to be sent to

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Further information can be obtained from Dr. Béla Majorovits (Email: bela@mppmu.mpg.de).

The call is open until the position is filled