



Postdoc position - IceCube project at the University of Wisconsin-Madison

The Wisconsin IceCube Particle Astrophysics Center (WIPAC) at the University of Wisconsin-Madison is seeking a postdoctoral researcher with experience in data analysis and detector development to conduct independent research projects focusing on neutrino astronomy and fundamental physics with data from the recently completed IceCube neutrino telescope at the South Pole.

IceCube, the largest neutrino telescope ever built, is now in the second year of full operation and has reached an unprecedented total exposure of two square-kilometer-years of data. With this data set, it is for the first time possible to address some of the most pressing questions in astroparticle physics as well as to study atmospheric neutrinos with huge statistics. The successful candidate is expected to pursue rigorous independent research on IceCube, including its embedded DeepCore detector. IceCube's low-energy extension allows studies of neutrino oscillations with atmospheric neutrinos in the energy range from 10 to 100 GeV. A possible upgrade of DeepCore to a denser detector (PINGU) is being investigated. The candidate is expected to contribute to research and development of the overall detector design as well as an advanced design of the optical sensors of such a detector.

While research including IceCube's low-energy data is expected, it is not confined to this energy range or to atmospheric neutrinos. Opportunities exist to contribute in other areas, such as the search for point sources and diffuse fluxes of cosmic neutrinos, studies of higher energy atmospheric neutrinos, searches for dark matter, the study of the composition and arrival direction distribution of cosmic rays, or the search for neutrinos associated with gamma ray bursts and supernovae.

Requirements:

- A recent (within the last 4 years) Ph.D. in particle astrophysics, high-energy physics, or related fields, is required.
- The ability to analyze and interpret experimental data and strong programming skills (e.g. C++, python, ROOT).

Preferences:

- Experience with detector testing or data acquisition development.
- Experience with hardware development, including familiarity with laboratory instrumentation and electronics.
- Experience with firmware development and/or hardware description languages (e.g. VHDL, Verilog).

This position will start in the Fall; applications should be completed by August 31. To apply, send a current cv and contact information for three references to postdoc@icecube.wisc.edu. Have your referees send their letters to the same address. For further information, e-mail Professor Albrecht Karle at karle@icecube.wisc.edu.