

RESEARCH ASSOCIATE
Experimental High Energy Physics

The Department of Physics at Stanford University is inviting applications for a postdoctoral research associate position to participate in two long baseline neutrino experiments: MINOS and NOvA, utilizing one neutrino beam from Fermilab and two separate detectors in northern Minnesota.

The MINOS experiment is designed to study neutrino oscillations in the “atmospheric” delmsq region, through numu disappearance, numu to nue transition and depletion of NC events. The Far Detector is a multi-kiloton magnetic iron/scintillator spectrometer in the Soudan mine in Minnesota, some 735 km away. The first results on numu disappearance and search for sterile neutrinos, based on the initial data sets, have been published already and the first results on nue appearance have been presented at the recent conferences. The current emphasis in the analysis efforts is to refine all of these measurements with a much larger data sample based on 7E20 protons on target. In addition, starting this fall, we shall commence a dedicated run with muon antineutrinos.

In parallel with the accelerator neutrino work we are also taking data on atmospheric neutrinos where MINOS uniqueness of having a large magnetized detector underground allows us to perform new measurements. In addition, the experiment studies cosmic rays and several results have already been published based on cosmic ray measurements that explored issues that have not been studied previously .

NOvA experiment is designed as the next generation oscillation experiment focusing on search for nue appearance. The eventual goal of that program is to measure the mass hierarchy and search for CP violation in the neutrino sector. This experiment will utilize a detector located in the same beam as used in MINOS but placed off axis further north in Minnesota. The detector will be a fine grained liquid scintillator calorimeter. The construction of the experiment in Minnesota has started already and we anticipate the first data taking with a partial detector in 2012..

It is anticipated that the successful candidate will divide his/her time roughly equally between MINOS and NOvA work. MINOS work will involve mainly participation in data taking and physics analyses. Currently Stanford’s involvement in the NOvA work is limited to data acquisition but we plan to expand our involvement in the future to other activities both in the detector construction and in the software development. It is expected that the majority of the successful candidate’s time will be spent (at least initially) at Fermilab. The initial appointment will be for three years with the possibility of an extension.

Interested applicants are requested to submit a curriculum vitae and publication list and arrange for three letters of reference to be sent to:

Professor Stanley Wojcicki
Stanford University
Physics Department
Stanford, CA 94305-4060

Electronic submission to sgweg@slac.stanford.edu is encouraged but not required. The applications should be completed by October 15, 2009; applications submitted after that time may be considered, depending on the status of the search process at that time.

Stanford University is an equal opportunity, affirmative action employer. We are especially interested in receiving applications from female and minority physicists.