

**Dr. Mark Convery**  
SLAC MS 60  
2575 Sand Hill Rd.  
Menlo Park, CA 94025

December 04, 2017

Dear Dr. Mark Convery,

I recently received word from Dr. Kazuhiro Terao of a research associate position opening in the Neutrino Group at the SLAC National Accelerator Laboratory associated with the Deep Underground Neutrino Experiment (DUNE), MicroBooNE, and ICARUS. I would like to apply for the position.

I received my Ph.D. from the University of Hawaii in 2016 working on event track reconstruction and particle ID techniques in liquid scintillator at KamLAND (Kamioka Liquid Scintillator Antineutrino Detector) in Kamioka, Japan. My dissertation was on indirect dark matter search by looking for a directional excess of neutrino fluxes from the core of the Sun and Earth. According to my understanding, my work is the first ever physics application of directional neutrino reconstruction in scintillator. A paper for this is currently under preparation. During my studies as a graduate student, I have also had the opportunity to work on R&D for various other projects involving liquid scintillator development and testing as well as electronics development.

My most recent position has been at the University of California, Los Angeles as a postdoctoral researcher from April, 2016, with CUORE (Cryogenic Underground Observatory for Rare Events) at LNGS (Laboratori Nazionali del Gran Sasso), Italy working on modeling radioactive contamination backgrounds of the detector and of bolometer thermal signals in a cryogenic environment, as well as various signal processing algorithms. A paper for the first neutrinoless double beta decay analysis using CUORE data was submitted for publication in October, 2017, and is currently under review.

My interest and experience in event reconstruction and neutrinos as well as R&D in commissioning phases of various other experiments places me in a unique position to apply for your position. I believe that I can make a significant contribution to your group. Please feel free to contact me if you have any questions or need further information.

Thank you for your consideration.

Best wishes,

**Michinari Sakai**

*Attached: curriculum vitae, research statement, publication list, list of referees*

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