

**SNOLAB**

Creighton Mine #9  
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Canada

December 04, 2017

Dear SNOLAB,

I recently received word from one of my colleagues of a research scientist position opening at SNOLAB. I would like to apply for the position.

I am currently working as a post-doctoral researcher at the University of California, Los Angeles with the CUORE (Cryogenic Underground Observatory for Rare Events) neutrinoless double beta decay experiment at LNGS (Laboratori Nazionali del Gran Sasso), Italy working on modeling the radioactive contamination backgrounds of the detector and the bolometer thermal signals in a cryogenic environment. I have also been heavily involved in the optimization of the signal processing for the recent upgrade from CUORE-0 to CUORE which increased the detector mass by a factor of almost 20. A paper for our first neutrinoless double beta decay analysis using CUORE data was submitted for publication in October, 2017, and is currently under review (<https://arxiv.org/abs/1710.07988>).

Previously, I have also worked on event track reconstruction and particle ID techniques in liquid scintillator at KamLAND (Kamioka Liquid Scintillator Antineutrino Detector) in Kamioka, Japan. This work involved a 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.

My interest and experience in the development of novel neutrino detection techniques in liquid scintillator as well as R&D in the commissioning phases of experiments places me in a unique position to apply for your position. I believe that I can make a significant impact to your team of scientific expertise at SNOLAB.

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*

**Michinari Sakai**

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