

Dear Team Hiring Manager,

As a budding and motivated physicist, I am interested in joining your team and applying my skills to contribute to our nation's security by analyzing data from underground nuclear tests (UGTs). I would like to apply for the position regarding vacancy IRC72563.

I am currently a post-doctoral researcher at the University of California, Berkeley with expertise in nuclear decay and particle transport modeling working in the field of particle/nuclear physics.

With regard to my ability to meet the specific requirements of this job:

- **Education:** Received PhD in 2016 with 6 years of experience working on particle transport/radiation simulations, algorithm software development, and large-scale data analysis for novel particle detection technologies.
- **Strong communication skills:** Contributed work published in various journals, and oral presentations given at institutions such as Fermilab, Lawrence Livermore National Laboratory, Argonne National Laboratory.
- **Understanding of statistics and error analysis:** Experience conducting independent data analyses using tools such as ROOT/RooFit/Python to conduct comparative analyses of data and Monte Carlo in regimes of both low/high statistics using P-value/Poisson statistics.
- **Experience with optics:** Dissertation work done on optical modeling and event reconstruction algorithm development using scintillation photons in the KamLAND neutrino experiment as well as the mini-TimeCube neutron detector. Postdoctoral work in characterization of VUV optical wavelength shifters.
- **Familiarity with particle and radiation detectors:** Past experience working with both liquid and solid scintillation particle detectors as well as calorimeters.
- **Familiar programming languages:** Python, C/C++, Mathematica, Fortran, SolidWorks, AutoCAD, BASH.
- **Experience in simulation:** 8 years of experience working with GEANT4 modeling radiation transport and effects on real hardware as well as photon propagation.
- **Ability to obtain Q-clearance:** US citizen.

I would appreciate an opportunity to meet and discuss my application at an interview. I have also sent my resume and other relevant documents for your consideration. Please feel free to let me know if you have any questions.

Thank you for your time,

**Michinari Sakai**

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