

Ground-based Midcourse Defense Team

August 17, 2019

*Johns Hopkins University
Applied Physics Laboratory*

Dear Team Manager,

As a budding and motivated technologist seeking to apply my skills to defend my country, I am interested in the Missile Defense Systems Engineer and Analyst position to join your Ground-based Midcourse Defense Team. I would like to apply for the position.

I am currently a post-doctoral scholar at the University of California, Berkeley with expertise in particle transport simulations working with the CUORE (Cryogenic Underground Observatory for Rare Events) neutrinoless double beta decay experiment.

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

- **Education and experience:** Received PhD in experimental particle physics (2016) with 6 years of experience working on particle transport simulations, algorithm software development, and large-scale data analysis for novel dark matter detection technologies.
- **Familiar programming languages:** C/C++, Python, Mathematica, Fortran, SolidWorks.
- **Communicating with peers about technical topics:** Mentored 3 PhD-level students, and several undergraduate students about simulation modeling and software development at UC Berkeley and UCLA. Experience collaborating with 3 international physics experiment in the US, Japan, Italy.
- **Ability to obtain security clearance:** US citizen with no other citizenship.
- **Knowledge of statistical analysis techniques:** Experience optimizing parameter spaces using chi-square/likelihood techniques analyzing large-scale particle physics data using statistical analysis tools in ROOT/Python.
- **Innovative problem solving:** At the University of Hawaii, I developed an imaging algorithm to open the doors to a never-before-explored capability of directional neutrino detection in scintillator detectors using real data for the first time. According to my understanding, this work is the first ever physics application of directional neutrino reconstruction in scintillator.

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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