Derek **Fujimoto**

Postdoctoral Researcher in Physics

About me

As an experienced and methodical researcher, I've always been passionate about applying myself in new environments. Although I'm currently a part of a multinational particle physics collaboration, in my graduate studies I used β-NMR and large-scale simulations to understand the motion of molecules in glass forming materials. I've published papers in journals attributed to particle physics, physical chemistry, condensed matter, and software. As a result, I have developed a very broad background and skill set, and am effective both in the lab and analyzing data. I enjoy working as a part of a team, both as mentor and mentee, but am very independent and self-motivated.

Languages

English • French

Python • Cython • Julia • C++
MATLAB • BASH • ROOT
LaTeX

LinkedIn

Github

Scholar

At a Glance

- Ph.D. in Physics
- Nearly 2 years as a Postdoctoral Researcher, supervising 7 undergraduate students
- 8 years research experience on a wide array of topics
- 27 academic publications
- Strong programming, data analysis, experiment, and interpersonal skills

Recent Experience

2021– **Postdoctoral Researcher in Particle Physics**
TRIUMF
Magnetic field characterization, measurement, and shielding for the ultra-cold neutron group. Hired and supervised students, designed and conducted experiments in a multinational collaboration. Oversaw commissioning of a $2.5M magnetically shielded room.

2015–2021 **Graduate Research Assistant in Soft Matter**
University of British Columbia
Designed and conducted beta-detected NMR experiments in ionic liquids and polymer glasses using a radioactive ion beam at TRIUMF. Wrote molecular dynamics simulations of polymer thin films on large high-performance computing clusters.

Education

2021 **Physics**
PH.D. · University of British Columbia

2015 **Physics**
M.Sc. · University of British Columbia

2013 **Physics**
B.Sc. · McGill University

Academic Publications

Full academic CV here.

- 18 peer reviewed publications (4 first author)
- 9 conference proceedings (2 first author)
- 9 presentations and 5 posters at international conferences and workshops

Awards

2017 Killam Graduate Teaching Assistant Award

2015 Stuart Blussom Quantum Matter Institute QuEST Fellowship

Complementary Education

2023 Crane Operator Training
2022 Advanced Radiation Protection Training
2018 Instructional Skills Workshop
2014 Laser Safety
2014 Radioactive Calibration Sources

Software Development

bfit General-purpose β-NMR analysis GUI and python API, now the definitive analysis program

bccd β-NMR beamspot analysis GUI and python API

mudpy TRIUMF μSR file reader

QZFM Unofficial QuSpin Python API: serial communication over USB

Additional Skills

Science	Magnetic shielding, UHV systems, clean room procedures, cryogenics, ion beams, Monte Carlo, signal processing, DAQ, technical writing, and general lab skills.
Engineering	Solidworks, 3D printing.
Programming	numpy, scipy, pandas, matplotlib, linux.
Leadership	Team management, performance assessment, project supervision.
Other Software	Git, Gaussian, LAMMPS, MS Word, MS Excel, VSCode, GIMP, Inkscape

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