

# Stanford

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## Javier F. Acevedo

Research Associate-Theoretical, SLAC National Accelerator Laboratory

### CONTACT INFORMATION

- **Alternate Contact**

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### Bio

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#### BIO

I am a theoretical physicist specializing in novel dark matter search strategies, with an emphasis on using celestial bodies as natural probes. My research also delves into the exploration of novel dark matter signatures in terrestrial detectors, with a strong focus on the complementarity between astrophysical observations and direct detection experiments.

You can find an up to date list of my publications on the INSPIRE link below.

#### CURRENT ROLE AT STANFORD

Postdoctoral Research Associate at SLAC

#### EDUCATION AND CERTIFICATIONS

- PhD, Queen's University , Physics (2022)
- Undergrad, Universidad Nacional de Mar del Plata , Physics (2017)

#### LINKS

- INSPIRE Profile: <https://inspirehep.net/authors/1791397>

### Professional

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#### WORK EXPERIENCE

- Research Associate - SLAC National Accelerator Laboratory (October 1, 2022 - present)
- Research Associate - Queen's University (May 1, 2022 - September 30, 2022)

### Publications

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#### PUBLICATIONS

- **Evaporation Barrier for Dark Matter in Celestial Bodies**  
Acevedo, J., Leane, R., Smirnov, J.  
arXiv e-print.  
2023 20

- **Milky Way White Dwarfs as Sub-GeV to Multi-TeV Dark Matter Detectors**  
Acevedo, J. F., Leane, R. K., Santos-Olmsted, L.  
arXiv.  
2023 29
- **Warming nuclear pasta with dark matter: kinetic and annihilation heating of neutron star crusts** *JOURNAL OF COSMOLOGY AND ASTROPARTICLE PHYSICS*  
Acevedo, J. F., Bramante, J., Leane, R. K., Raj, N.  
2020
- **Dark Matter Raining on DUNE and Other Large Volume Detectors**  
Acevedo, J. F., Berger, J., Denton, P.  
Arxiv.  
2024 28
- **Loosely Bound Composite Dark Matter**  
Acevedo, J. F., Boukhtouchen, Y., Bramante, J., Mohlabeng, G., Cappiello, C., Tyagi, N.  
Arxiv.  
2024 12
- **Dark Kinetic Heating of Exoplanets and Brown Dwarfs**  
Acevedo, J. F., Leane, R. K., Reilly, A. J.  
Arxiv.  
2024 24
- **Old rocks, new limits: excavated ancient mica searches for dark matter** *JOURNAL OF COSMOLOGY AND ASTROPARTICLE PHYSICS*  
Acevedo, J. F., Bramante, J., Goodman, A.  
2023
- **Mineral Detection of Neutrinos and Dark Matter. A whitepaper** *arXiv*  
Baum, S., et al  
2023: 113
- **ino and Gamma-Ray Signatures of Inelastic Dark Matter Annihilating outside Neutron Stars** *Neutr arXiv*  
Acevedo, J. F., et al  
2023: 19
- **Dark Matter-Induced Baryonic Feedback in Galaxies**  
Acevedo, J. F., Boukhtouchen, Y., An, H., Bramante, J., Richardson, M., Sansom, L.  
arXiv.  
2023 17
- **Accelerating composite dark matter discovery with nuclear recoils and the Migdal effect** *PHYSICAL REVIEW D*  
Acevedo, J. F., Bramante, J., Goodman, A.  
2022; 105 (2)
- **Diffuse x-ray and gamma-ray limits on boson stars that interact with nuclei** *Journal of Cosmology and Astroparticle Physics*  
Acevedo, J. F., Bhoonah, A., Bramante, J.  
2022
- **Nuclear fusion inside dark matter** *PHYSICAL REVIEW D*  
Acevedo, J. F., Bramante, J., Goodman, A.  
2021; 103 (12)
- **Dark matter, destroyer of worlds: neutrino, thermal, and existential signatures from black holes in the Sun and Earth** *JOURNAL OF COSMOLOGY AND ASTROPARTICLE PHYSICS*  
Acevedo, J. F., Bramante, J., Goodman, A., Kopp, J., Opferkuch, T.  
2021

- **Supernovae sparked by dark matter in white dwarfs** *PHYSICAL REVIEW D*  
Acevedo, J. F., Bramante, J.  
2019; 100 (4)
- **Front propagation dynamics: Qualitative differences revealed by very high intensity fluctuations** *PHYSICAL REVIEW E*  
Mangioni, S. E., Fernandez Acevedo, J.  
2018; 98 (5)
- **Limiting the stroke of a Schmitt trigger with multiplicative noise** *PHYSICAL REVIEW E*  
Zarza, G. A., Mangioni, S. E., Fernandez Acevedo, J., Deza, R. R.  
2017; 95 (5): 052143

## PRESENTATIONS

- Celestial and underground searches for heavy dark matter - Queen's University (2022)