

MICHAEL E. ROWAN

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<https://mrowan137.dev>

EMPLOYMENT

AMD

Senior Member of Technical Staff

Santa Clara, CA (2024 – Present)

Member of Technical Staff

Santa Clara, CA (2021 – 2024)

- Application performance optimization for the exascale supercomputer *El Capitan*.
- Spotlight Awards (3×) for contributions to El Capitan June 2024 Top500 ranking, MI300 accelerator launch, and *Frontier* exascale supercomputer on-site support.

BERKELEY LAB

Postdoctoral Fellow

Berkeley, CA (2019 – 2021)

- Performance tuning of particle-in-cell code *WarpX* for GPU+CPU platforms.
- Improved load balancing in WarpX, achieving 4× speedup in realistic use cases.

EDUCATION

HARVARD UNIVERSITY

Ph.D. in Physics

Cambridge, MA (2013 – 2019)

- Dissertation: *Dissipation of Magnetic Energy in Collisionless Accretion Flows*
- Awards: Purcell Fellowship, An Wang Fellowship, Wallace Noyes Fellowship

OBERLIN COLLEGE

B.A. in Physics, Mathematics

Oberlin, OH (2009 – 2013)

- Thesis: *Doppler-free Sat. Fluor. Spectroscopy of Lithium Using a Frequency Comb*
- Awards: NSF S-STEM Award for Computation & Modeling, Weinstock Prize in Physics, Stern Merit Scholarship in Natural Sciences, Phi Beta Kappa, Sigma Xi

SKILLS

Research, GPU computing, Programming (HIP/CUDA, C, Python), Perf. tuning

SELECTED PUBLICATIONS

- M.E. Rowan, A. Huebl, K.N. Gott, J. Deslippe, M. Thévenet, R. Lehe, & J.-L. Vay (2021). “In-situ Assessment of Device-side Compute Work for Dynamic Load Balancing in a GPU-accelerated PIC Code.” In *PASC21: Proceedings of the Platform for Advanced Scientific Computing Conference 2021*.
- M.E. Rowan, L. Sironi, & R. Narayan (2017). “Electron and Proton Heating in Trans-relativistic Magnetic Reconnection.” In *The Astrophysical Journal* 850 29.