

Abe Levitan

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Education

Massachusetts Institute of Technology (Cambridge, MA, 2017-Present)
Graduate Student, Department of Physics

Olin College of Engineering (Needham, MA, 2012-2016) 3.90/4.0 GPA
B.S. in Engineering with a Concentration in Physics

Stuyvesant High School (New York, NY 2008-2012)
Stuyvesant H.S. Diploma / NY Regents Diploma

Publications

MacDonald, M. J. et al (2016). **Measurement of high-dynamic range x-ray Thomson scattering spectra for the characterization of nano-plasmas at LCLS**. Review of Scientific Instruments, 87(11), 11E709.

Gamboa, E. J. et al (2016). **Dual crystal x-ray spectrometer at 1.8 keV for high repetition-rate single-photon counting spectroscopy experiments**. Journal of Instrumentation, 11(8), P08015.

Research Experience

Graduate Student (Comin Photon Scattering Group @ MIT, July 2016 - Present)
Doing system development for a low-temperature, high-pressure micro-Raman spectrometer. Analyzing ptychographic data regarding various orders in correlated solid state systems.

Physical Science Researcher (SLAC National Accelerator Lab, July 2016 - Present)
Studied stacking faults and crystallization dynamics in hydrogen and deuterium microjets with x-ray diffraction. Additionally provided support on several x-ray spectroscopy experiments run by other researchers at SLAC.

DOE SULI Intern (SLAC National Accelerator Lab, Summer 2015)
Worked on data collection and live analysis for an experiment at LCLS. Initiated project to study stacking faults in a hydrogen microjet using x-ray diffraction data from LCLS

Olin SCOPE Project (Boston Scientific, 2015-2016)
Developed a new mathematical model for nonuniform compression of braided wire stents.

Research Assistant, Physics and Physics Education (Olin / CIQM, Summer 2014)
Designed and tested a spatially resolved Raman spectrometry experiment for an upper division physics lab class at Wellesley College.

Research Assistant, Mathematics (Olin College, Summer 2013)
Computational and theoretical research regarding equilibria and traveling-wave solutions in a mathematical model with applicability to martensitic materials.

Presentations

High Powered Laser User Meeting (SLAC National Accelerator Lab, 2016)

Awarded the conference poster award for a poster presentation describing updated results from my XRD analysis of hydrogen microjets.

High Powered Laser User Meeting (SLAC National Accelerator Lab, 2015)

Poster presentation with preliminary results from my XRD analysis of hydrogen microjets.

CIQM Annual Conference (Harvard SEAS, 2014)

Poster presentation on my lab module development project with the CIQM.

Course Assistantships

Partial Differential Equations (Olin College, Spring 2016)

Mentored student teams in computational projects, graded, and ran office hours.

Quantum Mechanics (Olin College, Spring 2016)

Graded and ran office hours for an introductory class focused on atomic physics.

Linearity II (Olin College, Fall 2014)

Graded and ran office hours for a class in linear algebra and vector calculus.

Physics of Energy (Olin College, Spring 2014)

Helped debug and wrote problem sets for a nontraditional lab-heavy physics course.

Electricity and Magnetism (Olin College, Fall 2013)

Graded and occasionally lectured for a standard introductory E&M Course.

Academic Awards/Honors

National Merit Olin College of Engineering Scholarship Recipient

Programming Experience

Python Extremely proficient, comfortable with major scientific toolboxes, image processing, device communication, and parallelization frameworks.

Matlab Extremely proficient, significant experience with signal processing, numerical integration, symbolic math, linear algebra, and GUI capabilities.

C Moderate experience with systems level programming and embedded control systems.

Java, Logo, Scheme: Moderate experience in classroom context, familiar with basic language structure and features.