

Trever T. Hines

Education

- 2012–present **PhD candidate Geophysics (certificate in Computational Engineering)**,
University of Michigan, Ann Arbor, MI
Graduation: August 16, 2017
Advisor: Eric A. Hetland
Dissertation: Transient ground deformation in tectonically active regions and implications for the mechanical behavior of the crust and upper mantle
- 2008–2012 **BS Geology**, *University of Illinois*, Urbana-Champaign, IL

Research Experience

- 2012–present **Graduate student research assistant**, *University of Michigan*
- Developed a machine learning algorithm to detect geophysical signal in geodetic data
 - Used the detected geophysical signal to improve our understanding of the Earth's composition and tectonic processes
 - Introduced an innovative method to characterize noise in geodetic data
- 2011 **Ecological modeling intern**, *Smithsonian Environmental Research Center*
- Used R and ArcGIS to create statistical models describing blue crab populations in Chesapeake Bay

Teaching Experience

- 2014–2016 **Graduate student instructor**, *University of Michigan*
- Instructed labs for a graduate level course on data analysis and inverse theory
 - Topics included statistical hypothesis testing, uncertainty quantification, regression, and Bayesian inference
- 2015 **Michigan Math and Science Scholars instructor**, *University of Michigan*
- Co-taught a course for high school students on the mathematics of natural hazards

Programming Proficiencies

Python, Cython, MATLAB, R, Bash, \LaTeX

Recent Publications

- 2017 Hines, T. T., and E. A. Hetland. Revealing transient strain in geodetic data with Gaussian process regression. *submitted to Geophys. J. Int.*
- 2017 Hines, T. T., and E. A. Hetland. Unbiased characterization of noise in geodetic data. *submitted to J. Geod.*
- 2016 Hines, T. T. and E. A. Hetland. Rheologic constraints on the upper mantle from five years of postseismic deformation following the El Mayor-Cucapah earthquake. *J. Geophys. Res.*, 121, doi: 10.1002/2016JB013114
- 2016 Hines, T. T. and E. A. Hetland. Rapid and simultaneous estimation of fault slip and heterogeneous lithospheric viscosity from post-seismic deformation. *Geophys. J. Int.*, 204, doi: 10.1093/gji/ggv477