Graduate Student Opportunities in the Elliott Geodesy Group

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I am currently recruiting graduate students for the projects detailed below. In each case, research will combine data processing and analysis and modeling. Fieldwork is a possibility. Students will have the opportunity to work within interdisciplinary, multi-institutional collaborative teams.

Prospective geodesy students should have a strong quantitative background and some programming experience would be a plus. Students should have the ability and willingness to fill any knowledge gaps in physics, math, and programming. Detailed prior knowledge of geophysics in not required.

If you are interested in a graduate position, please take a look at my website for more information on my research and get in touch. I prefer students to contact me before applying to the department. To receive full consideration for university and college recruitment fellowships, potential PhD students must apply by November 30. More information on the graduate application process can be found here:
https://ees.natsci.msu.edu/academics/graduate/application.aspx

Slip Behavior Along the Alaska Subduction Zone

The Alaska-Aleutian subduction zone is extremely active, with six M8+ earthquakes (including the second largest recorded earthquake, the 1964 M9.2 Alaska earthquake) during the past century and four M7+ earthquakes in the Shumagin and Semidi segments in the past three years alone. This project will investigate how past earthquakes in and near the Shumagin and Semidi segments may be related to coupling or locking between the upper and lower plates. Student research will involve using a combination of geodetic (GNSS/GPS and InSAR), seismic, and geologic data to develop new slip models for historic earthquakes and estimates of coupling along the subduction megathrust. The graduate student will have the opportunity to interact with other collaborating faculty at MSU and faculty and students at the University of Alaska Fairbanks.

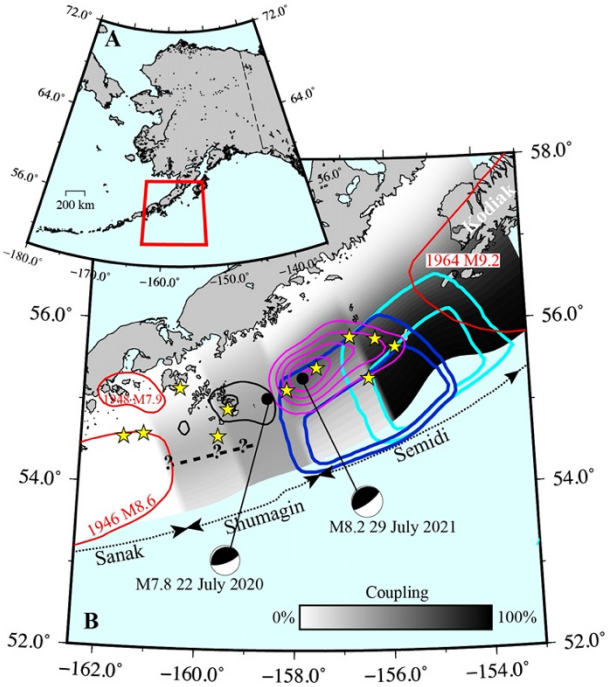

Plate Kinematics and Strain Distribution Along the Southern East Africa Rift

The East Africa Rift system is the prime example of how continents rift apart. While advances have been made in understanding how the more well-developed northern rift systems work, major questions remain about the early-stage rifting occurring along the Malawi segment of the rift system. The project will involve using GNSS/GPS data from sites in Malawi, Tanzania, and Zambia to investigate how strain is distributed throughout the region, how the strain relates to earthquakes and known geologic structures, and whether the region may be fragmenting into smaller tectonic blocks. Student research will focus on using GNSS/GPS data to develop estimates of the strain field and new regional scale tectonic models. The graduate student will have the opportunity to interact with faculty and students at Cornell University and Tulane University as well as research collaborators in Tanzania, Malawi, and Zambia.