

Lab 9: Shallow-subsurface geophysics - Hammer seismics
EPSC 240, Geology in the Field
Oct 31, 2018

Due date: Wednesday Nov 7

Meet: 1:35 pm in FDA 348

Bring: Notebooks

Wear: Whatever you want

Instructions: Go out to the field in the centre of campus to meet the TAs. Follow instructions to set up the geophones and prepare for data collection. Then help the TAs collect the equipment and put it away. After this, we will return to the classroom to learn about processing the data, picking arrivals, and determining the depth to bedrock. Take careful notes to record the methods of data collection, including the processing, for use in your report. Take photos or make diagrams along the way to include in the write-up. Each student will turn in their own report.

Your report (~1000 words) will include the following sections:

1. **Abstract:** A 3-sentence summary. Write this last (after you have worked out the main conclusions of the report). The first sentence should give the introduction and goal of the lab. The second sentence should describe your data and observations. The third sentence should give the interpretation and conclusion.
2. **Introduction:** 2-3 paragraphs (about 150 words) describing the goal of the project, the location and setting.
3. **Methods:** 5-6 paragraphs (about 300 words) describing in detail the methods used to collect and process the data. Include the field methods as well as the data processing that you observe or is shown to you. Describe the method for determining the depth to bedrock and the dip of the bedrock interface. Do not refer to the actual data or results in this section.
4. **Data / Observations:** Describe all the data collected. Include figures in the report which display the data, and results of processing and/or calculations. Include any events or observations made during data collection which may be relevant to the outcomes.
5. **Interpretation / Discussion:** 5-6 paragraphs (about 300 words) discussing the quality of the data, sources of error, and the significance of the error for the result (e.g., if your picked arrivals are accurate within a certain time interval, how much of an effect does that have on the estimation of depth to bedrock or dip of bedrock interface?). Include any unanswered questions.
6. **Conclusion:** 1-2 paragraphs (< 100 words) reporting the final conclusion of the study. Include any suggestions on how to improve results.