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# Examining temperatures and microgeochemical processes on fault slip surfaces with synchrotron methods

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# Examining temperatures and microgeochemical processes on fault slip surfaces with synchrotron methods

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## Types of data

Preservation of all data, samples, physical collections and other supporting materials needed for long-term earth science research and education is required of all EAR-supported researchers.

Samples - The samples for this work are rock samples collected in the field, or from core, from various sites along faults. Field and core localities will be recorded in the IEDA database. Samples from the field will be located with STRABO - an integrated digital geologic mapping system that generates a sample data table, with GPS coordinates for all samples and measurements, in the field.

Core from the SAFOD core are located within the IODP / SAFOD database. Core that we acquire from private sector sources, such as the Los Angeles Water and Power projects, will be registered in an IEDA database.

In addition to IEDA database, all sample locations and data will be archived on the Utah State University archival system digital commons, where all student generated data are stored.

[https://digitalcommons.usu.edu/funded\\_research\\_data/](https://digitalcommons.usu.edu/funded_research_data/)

Data acquired at the Stanford Synchrotron Radiation Lab are archived at SSRL on 3 separate storage systems, and all data are also downloaded and will be archived at the USU digital commons.

## Data and metadata standards

Data archives must include easily accessible information about data holdings, including quality assessments, supporting ancillary information, and guidance and aids for locating and obtaining data.

The data sets will be accompanied by readme or instructional files so that all acquisition parameters, data terms, and locations are clearly defined.

## Policies for access and sharing

It is the responsibility of researchers and organizations to make results, data, derived data products, and collections available to the research community in a timely manner and at a reasonable cost. In the interest of full and open access, data should be provided at the lowest possible cost to researchers and educators. This cost should, as a first principle, be no more than the marginal cost of filling a specific user request. Data may be made available for secondary use through submission to a national data center, publication in a widely available scientific journal, book or website, through the institutional archives that are standard for a particular discipline (e.g. IRIS for seismological data, UNAVCO for GP data), or through other EAR-specified repositories. Data inventories should be published or entered into a public database periodically and when there is a significant change in type, location or frequency of such observations. Principal Investigators working in coordinated programs may establish (in consultation with other funding agencies and NSF) more stringent data submission procedures.

Digital Commons and IEDA databases are fully public and searchable via any web browser. The data should likely be cited as:

Evans, J. P., Synchrotron data associated with fault zone determinations, beam lines 2-3, 6,2, and 10-2, acquired at Stanford Synchrotron Radiation Lab, various dates.

## **Policies and provisions for re-use, re-distribution**

For those programs in which selected principle investigators have initial periods of exclusive data use, data should be made openly available as soon as possible, but no later than two (2) years after the data were collected. This period may be extended under exceptional circumstances, but only by agreement between the Principal Investigator and the National Science Foundation. For continuing observations or for long-term (multi-year) projects, data are to be made public annually.

All data are openly available at the end of this project.

## **Plans for archiving and preservation of access**

Remember - Data may be made available for secondary use through submission to a national data center, publication in a widely available scientific journal, book or website, through the institutional archives that are standard for a particular discipline (e.g. IRIS for seismological data, UNAVCO for GP data), or through other EAR-specified repositories.

Data will be stored on the USU digital commons ([https://digitalcommons.usu.edu/funded\\_research\\_data/](https://digitalcommons.usu.edu/funded_research_data/) ) SSRL storage, and IEDA, as appropriate for the data. The USU digital commons is set up and maintained for long term archiving of data, with storage at 3 different sites.

Publications that result from this work also maintain data files storage. Raw SSRL data are very large files, and the manipulations of the data involve many intermediate steps. We will document the nature of these data analyses processes, and where appropriate, files of the results will be saved and archived on digital commons.