

Data Management Plan

The Institute for Quantum Information and Matter – IQIM

Products of the research and types of data

IQIM research groups produce data resulting from laboratory measurements and numerical simulations. Typical file size for results presented in a scientific publication is roughly 1GB.

Data from laboratory measurements is almost exclusively acquired digitally under computer control (e.g., photon counters, spectrum analyzers, analog to digital converters) and stored in various formats on hard disks. These formats are compatible with commercial software programs, including Mathematica, MatLab, Origin, and Igor Pro.

Standards to be used for data and metadata format and content

Processed data for each research publication will be stored in formats accessible by commercially available software. Data for each publication will be maintained in order to identify the actual numbers for all plots and tables in the publication, together with the plots and tables themselves.

Data access and sharing practices and policies

Caltech maintains a secure institutional repository that provides access to material that is of long-term value to the academic community, including datasets. The Caltech Collection of Open Digital Archives (CODA) <<http://libguides.caltech.edu/CODA>> makes use of the open source EPrints software that is installed on three high-availability Linux servers managed by the Library and utilizing fiber-attached SAN. CODA metadata conform to international standards. Documents and metadata are backed up to disk and tape, with off-site tape storage in case of disaster. All records are given Persistent URLs that do not change with system upgrades. Caltech CODA is indexed by all major Internet search engines. Currently, publications, theses and associated metadata are being archived in Caltech CODA.

- Data collected from IQIM research projects is stored and made available through formal publication in the research literature including supplementary materials archived at the journal website. An additional archive location for IQIM publications is the Caltech Library's CODA system. Supplemental information is available on the same web page, using the same persistent URL, with the publication listing.
- Doctoral theses are publically available by way of the archive in the Caltech library, <http://thesis.library.caltech.edu/>. Theses are indexed by author name, through CODA the document has a persistent URL and the document is indexed by section including each chapter and any supplemental materials.

Links to theses completed by members of IQIM are listed on the IQIM Thesis webpage (which is currently under construction but will soon be active.)

- Sharing of data subject to intellectual property and privacy or other rights is considered on a case-by-case basis by directly contacting the relevant faculty investigator.

- Questions about published results are addressed by the faculty member from the relevant research group. Faculty responses include directing the questioner to specific links in the archived data and publications, as well as consideration of requests for further supporting data.

Policies and provisions for re-use, re-distribution, and the production of derivatives

Except in cases subject to intellectual property and privacy or other rights, data use policies for IQIM research usually include rights to copy, distribute, adapt, display or include the data in other products. Attribution of IQIM and specific faculty is expected.

Archiving of data and preserving access to it

Data will be preserved by the IQIM faculty in usable form for five years beyond publication of any research finding.