

**EAGER: Testing the Galápagos as a long-term monitoring site for  
nitrous oxide emissions from the Pacific oxygen deficient zones**  
Data management plan

**Summary**

The PI will comply with the data management and dissemination policies described in the NSF Award and Administration Guide (AAG, Chapter VI.D.4) and the NSF Division of Ocean Sciences sample and data policy. Two types of data will be generated as part of this project: primary atmospheric measurements of gas partial pressures and inverse modeling results of gas emissions. All data collected (N<sub>2</sub>O and CO concentrations) will be made publicly available at regular intervals (see below).

**Data generation and backup**

The primary nitrous oxide and carbon monoxide data generated by the laser spectroscopy instrument will be maintained to the standards of the Advanced Global Atmospheric Gases Experiment (AGAGE) network.

All primary data will be backed up onsite in the Galápagos locally with a network-attached hard-drive system (NAS) and also transmitted to the US where they will be recursively backed up using MIT's pre-existing data storage systems. All instruments will be maintained on an uninterruptible power supply.

**Data sharing**

All preliminary data will be made publicly available, unlimited without charge for scientific purpose, within 1 month of collection on a web portal similar to <http://agage.mit.edu> set up expressly for this project. Calibrated and corrected data binned at hourly scales will be made publicly available within 6 months of collection on the same portal. Data will further be duplicately uploaded and maintained at the Ocean Carbon Data System (OCADS) maintained by NOAA. Files and relevant documentation will be uploaded in standard .csv and .dat text file formats. Each year, the corrected binned measurements will be uploaded to BCO-DMO.

**Inverse modeling results**

Modeling work will be performed using an in-house networked computing cluster that maintains recursive backups. All additional analysis and findings used in constructing research papers that arise from the proposed work will be archived and made available via ftp at MIT. We expect to produce standard meta-data that accompanies netcdf files as well as plain text documents describing the data.

Our research findings are estimated to produce less than 100 Gb of data per year, and we expect to produce standard meta-data that accompanies netcdf files as well as documents describing (in plain text) the results.

We intend to make the draft versions of the data publicly available as soon as we are reasonably confident in their validity, roughly the time we submit research papers. All data discussed in the papers that have been produced for this project will be available in final form when publications are finalized, without restrictions as to intellectual property. Marine N<sub>2</sub>O emissions will be submitted to the Biological and Chemical Oceanography Data Management Office (BCO-DMO).

Parameter	Dataset Size	Submission timeline (after generation)	Repository	Comments
Hourly mean N <sub>2</sub> O and CO ± std deviation	~2 MB/year	6 months	OCADS	Quality controlled / corrected and raw data
Monthly and	~10	12 months	BCO-DMO	Gridded marine emissions maps of N <sub>2</sub> O

seasonal emissions maps	N <sub>2</sub> O	MB/year			at monthly and seasonal timescales
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**Table 1. Summary of data products and submission databases.**