Plan Overview

A Data Management Plan created using DMPTool

Title: Greenhouse gases in Amazonia: integration of data from different observational platforms, and investigation of relationships with environmental factors

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Template: Digital Curation Centre (português)

Project abstract:

The Amazon forest is essential in balancing terrestrial carbon and storing carbon in soil and biomass. An imbalance in carbon exchanges between the biosphere and atmosphere is the leading cause of climate change observed in recent decades worldwide. In the Amazon, biosphere-atmosphere carbon exchanges occur in many ways: through photosynthesis and the vegetation's respiration and emission of greenhouse gases (GHG) by biomass burning and flooded areas. Several factors, such as vegetation characteristics, weather conditions, land use, intensity, and distribution of fires, influence these exchanges. Fluxes of GHG have been monitored in the Amazon since the late 1990s, with surface observations and onboard aircraft. In addition, measurements of GHG concentration have also been carried out via satellite since the 2000s, and more recently, model inversions of GHG surface fluxes from satellite observations have been developed. This set of observations on GHG offers a rich possibility of discovering knowledge about interdependencies between different environmental variables. However, the integration of such heterogeneous data is a challenge. This postdoctoral project aims to integrate data about GHG and related ecological variables in Amazonia from different observational platforms, considering the differences in spatial and temporal representativeness and other technical limitations. In addition, this project will select and apply a set of data analysis techniques suitable for investigating the relationships between GHG in Amazonia, environmental variables, and anthropogenic activities.

Start date: 12-01-2021

End date: 11-30-2024

Last modified: 04-28-2024

Copyright information:

Greenhouse gases in Amazonia: integration of data from different observational platforms, and investigation of relationships with environmental factors

<CHANGE TO ENGLISH>

Dados (**QUAIS TIPOS**) de ????? satélites (**QUAIS**).

Coletados no sistema do Mapbiomas e do Google Earth Engine de diferentes **DETALHAR**

The metadata associated to the data and project will focus information from technical advisors, data sources (open/private) and auxiliary data references about bioclimate subjects.

The project will observe all the legal procedures and social recommendations regarding all the social, ethic, ethnical issues, commonly seen in this kind of research project. The data will come mostly from open sources.

All copyright steps of this research project will follow the instructions from Universidade de São Paulo (USP).

The data generated by this research project will be stored in open-access repositories, such as the ARM-DOE/USA and others linked to the Universidade de São Paulo (USP) and the associated research centers and universities. It is planned to build a service system stored locally and in the cloud, making the data available for the scientific community and research centers.

The data generated by this research project will be open access, following the repositories guidelines too. Access will be granted to researchers upon request to the data curators and data managers.

The input datasets, generated by interpolation techniques with Machine Learning and Artificial Intelligence, and the outputs generated by the correlations between land usage and Greenhouse Gases concentrations in the Amazon

The long term data storage plan considers the access to open access repositories and their guidelines, with version control following the Github concepts. Data will be preserved in local servers at the University of São Paulo in a redundant storage system. It is contemplated to have data duplicated in the cloud making use of Amazon Web Services (AWS), Azure Cloud, Google etc

The data of this research project will be shared throughout the open-access repositories or by an online request. The requests will be evaluated by the data curator(s) who will give her/him access to the requested data.

No restrictions have been identified so far. A review of this statement may apply according to the evolution of the research project. However, the user must provide a formal request to the data curator to have access to data.

Prof. Dr. Pedro Correa from Polytechnic School, University of São Paulo (USP) is accountable for data management. He will manage a team of graduates and undergraduates, assigning them the responsibilities to conduct the DM activities such as metadata generation, data collection, analysis and validation, physical server storage and maintenance, etc. Prof. Dr. Luiz Machado from the Institute of Physics (USP) is the scientific advisor and is responsible for granting access to data.