EcoSML: Biodiversity Team Meeting 2019

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What is EcoSML?

Ecological Spectral Model Library
- EcoSML is a repository for spectral models and model coefficients. Currently EcoSML is optimized for PLSR models
- Upload models to the EcoSML repository or register and link your own repository to EcoSML
- EcoSML curators monitor uploads to ensure usability
- Recently launched and in the alpha testing phase
- Please let us know if you find bugs or have suggestions!!

Why is EcoSML important?
- Removes the need for users to recreate already published models
- Provides a platform for research groups to keep, organize, and search for their own models
- Acts as a conduit for sharing models with collaborators
- Opens the door for model comparison studies
- Makes hyperspectral data more accessible for new users
Package Directory

- Coefficients
  - `apply_PLSR_coeffs.py`

- Application code
  - `coefficients`

- Instructions (optional)
  - Can include instructions in the ReadMe when creating the package

- Example Spectra (optional)
  - `test_spectra.csv`

- Example output (optional)
  - `sample_results.csv`

- Evaluation report (optional)
  - `PLSR_model_evaluation_report.xlsx`
Ecological Spectral Model Library

⚠️ This is an early Alpha of EcoSML. Please report any bugs or issues you have here.

### Top Organizations
- UW EnSpec

### Top Keywords
1. chemistry
2. biology
3. nitrogen
4. tree
5. forest

### Top Themes
1. chemistry
2. biology

### Package Management
Login to Create Package

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**NASA**
Program: Advanced Information Systems Technology (AIST) Program
Grant Number: 80NSSC17K0244

**EcoSML Team**
University of Wisconsin Madison Environmental Spectroscopy (EnSpec) Lab
PI: Phil Townsend
Project Manager: Erin Wagner
Lead Developer: Justin Mez
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**Package Management**

[Login to Create Package]
User: ewagner

Manage My Account on EcoSIS
All EcoSML accounts are managed through EcoSIS. To edit your profile or change your password, simply login to EcoSIS and edit your account.

Manage My Organizations on EcoSIS
Just like accounts all EcoSML organizations are managed through EcoSIS. To create a new organization or manage an existing organization, simply login to EcoSIS then click 'My Organizations'.

Github Account
Link your GitHub account and gain access to any EcoSML Hosted Repository via git CLI or via the GitHub repository webpage. This will allow you to make commits, cut releases or use GitHub issues via the standard GitHub UI as well as EcoSML.

My Organizations
UW EnSpec

My Packages
Test_PLS_Chemistry_Phyiology_2018 - PLS coefficients and application code for predicting chemical and physiological traits in leaves.
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Create Package

Getting Started

Basic Information

Select Repository Type

You have the option to create an EcoSML Managed Repository or if you already have a GitHub repository you can create a Registered Repository.

- **EcoSML Managed Repository**
  
  Recommended for users who are new to source code management (git) or don’t want to manage their own repository. Managed repositories are easy to create and provide a simple interface for updating code. The repository will be hosted in the EcoSML GitHub organization.

- **Registered Repository**
  
  Recommended for users who have experience with git, want to host the repository in their own GitHub organization or already have a GitHub repository. You will provide EcoSML the URL to your existing GitHub repository on the next screen.

NEXT ➔
Create Package

 Package Name

 Package Overview

two sentence summary of package

 Overview (Short Description)

 Organization

 The [organization] organization this package belongs to, all members will have access. If you need to add other members, do so in the [organization] organization page.

 Language

 Which programming language is this package written in?

 Code Type

 - Package
   - The package is a downloadable software package meant to be installed on the language
     package management system such as [Python2/3], [R], [SciPy], [Julia], [Matplotlib], etc.
     Common package managers like `pip`, `conda`, and `brew` will install and make this package
     ready for installation from GitHub.

 - Standalone Application
   - This code is a self-contained application intended for use by end users.
Package Created!

1. Click below to download the package files and get started!
   Download package files

2. Locally add / update your model code, resources and papers.

3. Use the Files tab to sync changes back to EcoSML.

4. Use the Details tab to add model documentation, keywords and themes.

5. Use the Releases tab to create a versioned release of the model allowing the package show in search.

CLOSE
Package Created!

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CLOSE
Include all information that a user will need to use the model.
Be thorough when choosing key words. It will help users find your model.
Themes and categories will further help users find the right models.
Changes will not be saved until you hit "COMMIT CHANGES"
If you need to make changes to the package that do not require a change in version.
If you need to make changes to the package that do not require a change in version.
Changes

Please review changes below to ensure appropriate file modifications are being made to your package.

[test_spectra.csv]  Added
[output/sample_results.csv]  Added
[coefficients/PLSR_raw_coef_Nitrogen.csv]  Added
[coefficients/PLSR_raw_coef_Lignin.csv]  Added
[coefficients/PLSR_raw_coef_LMA_gm2_V2.csv]  Added
[coefficients/PLSR_raw_coef_Fiber.csv]  Added
[coefficients/PLSR_raw_coef_Chlorophyllab_mass.csv]  Added
[coefficients/PLSR_raw_coef_Chlorophyllab_area.csv]  Added
[coefficients/PLSR_raw_coef_Cellulose.csv]  Added
[coefficients/PLSR_raw_coef_Carotenoid_mass.csv]  Added
[coefficients/PLSR_raw_coef_Carotenoid_area.csv]  Added
[coefficients/PLSR_raw_coef_Carbon.csv]  Added
[apply_PLSR_coeffs.py]  Added
[PLSR_model_evaluation_report.xlsx]  Added

CANCEL  SAVE CHANGES
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/coefficients/PLSR_raw_coef_Fiber.csv Added
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/coefficients/PLSR_raw_coef_Chlorophyllab_area.csv Added
/coefficients/PLSR_raw_coef_Cellulose.csv Added
/coefficients/PLSR_raw_coef_Carotenoid_mass.csv Added
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/apply_PLSR_coeffs.py Added
/PLSR_model_evaluation_report.xlsx Added
Wagner-Demo
EcoSML Managed Repository

⚠️ Warning, your package will not show up in search until you create a release. Click the Release tab to create one.

**Releases**

[View on GitHub]

Click create above to create the packages first release!