2023 Workshop: The Last Python

Long title
Snakes on a Spaceship: The Last Python
Conveners
Alexa Halford
Angeline Burrell
Russell Stoneback
Alexa.J.Halford@nasa.gov
Description

2023 is the year of Open Science, and with that open code. Our field has been practicing open science for decades because our science necessitates it. Much of our science integrates measurements from multiple platforms, locations, outputs from a variety of models, as well as calculated physical parameters into a coherent system for analysis. The pure amount and variety of data types and analyses can make things challenging. Typically these challenges are solved separately by different research teams, leading to duplicated efforts - especially in the developed code. The study of the magnetosphere, ionosphere, and atmosphere is enhanced by making our analysis techniques and, thus, code, models, and data available to the community. 'Snakes on a Spaceship: The Last Python' focuses on open scientific Python software and its role in the CEDAR community.

Agenda

1. **Challenges in Releasing Academic Software Packages** - Doğacan Su Ozturk
2. **PyHC: updates and advancing community innovation** - Julie Barnum
3. **Superposed Epoch Analysis Using Time-Normalization: A Python Tool for Statistical Event Analysis** - Samuel Walton
4. **IRI in Python for Rapid Global Runs Global-IRI** - Victoriya Forsythe (A.G. Burrell)
5. **Additions to Pysat and CDAWeb: Availability of Datasets** - Teresa Esman
6. **pyDARN: A Python Library for SuperDARN Data!** - C.J. Martin (D.D. Billett)
7. **SCUBAS: A python-based numerical model to estimate electrical surges in submarine cables during geomagnetic disturbances** - Shibaji

Chakraborty

8. **EXOSpy: A python package to investigate the terrestrial exosphere and its FUV emission** - Gonzalo Cucho-Padin
9. **amisrsynthdata: A Case Study in Expandable Packages** **-** Leslie Lamarche
10. **Lessons Learned: Publishing the First Exectuable Paper in Heliophysics** **-** Shawn Polson

Justification

Open Science necessitates open code development. This ongoing series of sharing python packages and tutorials helps enable and encourage our community to adopt these open science processes. Providing a space to help CEDAR researchers dip their toe into open code development, and dive into the newest developments and packages demonstrates year after year the importance for sharing code, especially in this integrated system we call geospace.

Related to CEDAR Science Thrusts:
Fuse the knowledge base across disciplines in the geosciences
Manage, mine, and manipulate geoscience/geospace data and models
Workshop format
Short Presentations
Keywords
open science, open code, python, System Science
View PDF