2021 Workshop: Python for Space Science

Long title
Snakes on a Spaceship: Survival of the Python
Conveners
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Description

The pursuit of system science requires integrating measurements from multiple platforms into a coherent system for analysis. The variety of instrument types and data formats makes this challenging. Typically these challenges are solved separately by different research teams, leading to duplicated efforts. The reproducibility of scientific results are also affected, since most journal articles do not include complete analysis descriptions. The study of the magnetosphere and the ionosphere as a system would be enhanced if solutions to these problems were made broadly available to the community.

This year, 'Snakes on a Spaceship' will focus on Python packages developed by and for the CEDAR community and using version control within a community collaboration.

Please bring your computer, since there may be tutorials that you will be able to work through with the speaker.

Agenda

- Tutorial: Building documentation - Angeline Burrell (pdf)
- aurora-asi-lib - Mike Shumko
- pysat 3.0.0 - Russell Stoneback (pdf)
- HIME - Doğa Ozturk
- sami2py - Jeff Klenzing (pdf)
- IGRF - Leslie Lamarche and Ashley Smith (pdf)
- Community Discussion (pdf)

Justification

CEDAR justification: strategic thrust #6: manage, mine, and manipulate geoscience data and models

1) How the questions will be addressed: The challenge of performing system science is addressed by teaching the community about the existence and use of open source science software that enables system science

2) What resources exist, are planned, or are needed: Science python software already exists that helps the community achieve these goals, pysat, pydarn, Resen, etc.

3) How progress should be measured: Participation rates in open source science python software. Publications that use community tools, and software citation rate can also be tracked.

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