2017 Workshop: Python for Space Science

Long title
Snakes on a spaceship: 2 fast, 2 furious
Conveners
Russell Stoneback
Angeline Burrell
Jeff Klenzing
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 a challenge. Typically these challenges are solved separately by different research teams leading to duplicated efforts. 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.

The use of community developed software has found acceptance in astronomy (astropy) and solar science (sunpy). 'Snakes on a Spaceship' is focused on introducing the Python language, associated tools, and science software packages developed for the CEDAR and GEM community.

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

Agenda

Intro to Python and SpacePy ShoutOut (pdf) (A. Burrell)

Madrigal (pdf) (B. Rideout)

GeoData (pdf) (J. Swoboda)

DavitPy (pdf) (A. Reimer)

(lunch)

OvationPyme (pdf) (L. Kilcommons)

Signal Chain (A. Valdez)

PyGlow (pdf) (T. Duly)

PySat (pdf) (R. Stoneback)

Panel Discussion (J. Klenzing)

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, davitpy, spacepy, madrigal, etc.

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

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