# Python in Heliophysics Community Fall 2019 Meeting

November 4-6, 2019

*Meeting materials are located at* [*http://heliopython.org/meetings/*](http://heliopython.org/meetings/)

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# Table of Contents

[**Python in Heliophysics Community Fall 2019 Meeting**](#_wk29adekc64s) **1**

[**Table of Contents**](#_dzaue5puw9ay) **2**

[**Participants**](#_kythdjjw5i1j) **3**

[**Future work and conclusions**](#_z9pfz7crbm5k) **4**

[**Final agenda**](#_1zcm2bucjj59) **5**

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# Participants

Stuart Mumford

Nicholas Murphy

Alexandria Ware

Henry Winter

Jonathan Niehof

James Mason

Darren De Zeeuw

Will Barnes

Julie Barnum

Joey Mukherjee

Matthew Young

Virendra Verma

Meriem Alaoui

Wendy Carande

Bryan Harter

Jorge Amaya

Kevin Reardon

Robert Candey

Eric Grimes

Bernard Harris

Colin Simon

Vicki Knoer

Katelynn Greer

James Mason

Benjamin Brown

Liam Kilcommons

Giovanni Lapenta

Jon Vandegriff

Josh Elliott

Tom Baltzer

Jonathan Darnel

Larisza Krista

Aaron Roberts

Romain Dupuis

Emma Lieb

Ezra Huscher

Russell Stoneback

Hunter Leise

Carl Kjellstrand

Meeting Overview

The meeting was attended by about 40 people (some signed up late), with approximately a quarter of the participants attending remotely. The meeting spanned two and a half days, and was held at the Laboratory for Atmospheric and Space Physics (LASP) in Boulder, Colorado. The full agenda is attached at the end of this report. The first day consisted of various discussions related to introductory material, PyHC governance, ensuring an inclusive environment in PyHC, and funding opportunities for PyHC in the morning. The afternoon saw a few short guest lectures, plus several lightning talks for HDEE-funded projects within the PyHC community. Day two began with an AIDA presentation and finished out the morning with unconference sessions. Unconferences sessions involve attendees creating a list of relevant and interesting topics, voting on topics to discuss, and then breaking out into simultaneous sessions based on interest in the chosen topics. Each unconference session was led by one person, or a small group of people, and had another taking notes. Notes from these sessions can be found at [here](https://drive.google.com/drive/u/0/folders/1UcVdiiYJYXuZFJVhC5GJdjI10FHQowUt). The rest of day two consisted of hackathon sessions. Hackathons follow a similar procedure as unconferences, except instead of an open discussion, the main goal is to achieve a certain goal via working on a project side-by-side. Notes from hackathon sessions are located [here](https://drive.google.com/drive/u/0/folders/11DpBo4KfJFN_cJnEVO3j51h80yIdTDm9). Day three was a half day that consisted mainly of a couple tutorials, another funding discussion, and closing notes. General conference notes were taken by the PyHC group as a whole and are documented [herein](https://docs.google.com/document/d/1L6tDroqLhZzoqXXEznr2NQ-GEzKl6d4WVPOSOO866no/edit). All presentation slides were collected and put into the [Presentations folder](https://drive.google.com/drive/u/0/folders/1g24lTnybCtPwrOb2WPWpT5gUu4qIJsPQ) on the meeting Google drive.

# Future work and conclusions

The next meeting will be held at the Center for Astrophysics in Cambridge, MA in April 2020. We will also be meeting at the PyHC poster session at the AGU Fall Meeting in December, and we plan to hold telecons every few weeks as upcoming meeting and holiday schedules allow. ﻿

# Final agenda

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **Start Time** | **End Time** | **Duration** | **Type** | **Title** | **Presenter/Lead** |
| **Mon, Nov 4, 19** | | | | | | |
| Mon, Nov 4, 19 | 9:00 | 9:15 | 0:15 | Presentation | Introductions and welcome | Alex |
| Mon, Nov 4, 19 | 9:15 | 9:25 | 0:10 | Discussion | Project overview and meeting goals |  |
| Mon, Nov 4, 19 | 9:25 | 9:30 | 0:05 | Discussion | AGU Meetup |  |
| Mon, Nov 4, 19 | 9:30 | 10:00 | 0:30 | Discussion | Revisiting PyHC Governance/meeting committee | Alex |
| Mon, Nov 4, 19 | 10:00 | 10:30 | 0:30 | Discussion | [Funding Opportunities (e.g., CSSI)](https://drive.google.com/open?id=1RARHt2h7vHukcOucObQvZugdmVZZPacy) | Nick Murphy |
| Mon, Nov 4, 19 | **10:30** | **10:45** | **0:15** |  | **Break** |  |
| Mon, Nov 4, 19 | 10:45 | 11:15 | 0:30 | Discussion | Equity and inclusion as it relates to PyHC | Nick Murphy (and others?) |
| Mon, Nov 4, 19 | 11:15 | 12:15 | 1:00 | Presentation | High performance computing in Python-enabled heliophysics research | Ben Brown |
| Mon, Nov 4, 19 | **12:15** | **13:15** | **1:00** |  | **Lunch** |  |
| Mon, Nov 4, 19 | 13:15 | 13:30 | 0:15 | Presentation | Pysat suite of tools | Russell Stoneback |
| Mon, Nov 4, 19 | 13:30 | 14:45 | 1:15 | Presentation | Lightning Talks (HDEE-funded projects) + student presentation | \*\* Lightning talk order shown in Google Drive |
| Mon, Nov 4, 19 | **14:45** | **15:00** | **0:15** |  | **Break** |  |
| Mon, Nov 4, 19 | 15:00 | 16:15 | 1:15 | Presentation | Lightning Talks (HDEE-funded projects) | \*\* Lightning talk order shown in Google Drive |
| Mon, Nov 4, 19 | 18:00 |  |  | Group Dinner | Rio Grande Mexican Restaurant on Walnut St. |  |
| **Tues, Nov 5, 19** | | | | | | |
| Tues, Nov 5, 19 | 9:00 | 10:00 | 1:00 |  | AIDA presentation and discussion | Romain Dupuis |
| Tues, Nov 5, 19 | 10:00 | 10:40 | 0:40 |  | Unconference organizing |  |
| Tues, Nov 5, 19 | 10:40 | 11:30 | 0:50 | Unconference session | Data models (main room); Constructive code review (fish bowl room) |  |
| Tues, Nov 5, 19 | **11:30** | **11:40** | **0:10** |  | **Break** |  |
| Tues, Nov 5, 19 | 11:40 | 12:30 | 0:50 | Unconference session | Does heliophysics need a science platform like Pangeo (main room); Fostering community (fish bowl room) |  |
| Tues, Nov 5, 19 | **12:30** | **13:30** | **1:00** |  | **Lunch** |  |
| Tues, Nov 5, 19 | 13:30 | 14:15 | 0:45 | Discussion | PyHC Standards Review | Alex |
| Tues, Nov 5, 19 | 14:15 | 14:30 | 0:15 |  | Hackathon organizing |  |
| Tues, Nov 5, 19 | 14:30 | 17:00 | 2:30 |  | Hackathons - informal breaks as needed |  |
| **Wed, Nov 6, 19** | | | | | | |
| Wed, Nov 6, 19 | 9:00 | 9:50 | 0:50 | Discussion | PyHC Funding | Aaron |
| Wed, Nov 6, 19 | 9:50 | 10:40 | 0:50 | Unconference Session | Writing clean code (main room); Duplication of effort/code development (LSTB 151) |  |
| Wed, Nov 6, 19 | 10:40 | 10:55 | 0:15 | Discussion | Hackathon/Unconferences Updates |  |
| Wed, Nov 6, 19 | **10:55** | **11:05** | **0:10** |  | Break |  |
| Wed, Nov 6, 19 | 11:05 | 11:30 | 0:25 | Tutorial | Design Principles for Scientific Software Architecture | Nick Murphy |
| Wed, Nov 6, 19 | 11:30 | 11:55 | 0:25 | Tutorial | Contributing to PyHC Gallery | Stuart Mumford |
| Wed, Nov 6, 19 | 11:55 | 12:10 | 0:15 | Discussion | Wrap up, next steps, and choosing spring 2020 meeting dates, TELECON TIME | Alex |