We're building an object data model for better collaboration and faster data analysis

… and we want your help! Support and contributions from the IMPACTS Science Team are welcome and encouraged

SCAN ME!

Links to: https://torimcd.github.io/impacts_tools/

IMPACTS Tools: An open-source Python package for sharing code and accelerating science

V. McDonald, J. Finlon

Department of Atmospheric Sciences, University of Washington

BENEFITS OF A PUBLIC OPEN-SOURCE PACKAGE

FASTER DATA ANALYSIS & MORE EFFICIENT SCIENCE

- Sharing code lets us build on established routines instead of reinventing the wheel
- Many of us are working on the same datasets from the same storms - consensus on how to filter and work with the data makes all of our results stronger and more easily reproduced

ROBUST, TESTED, & WELL-DOCUMENTED CODE

- More people involved in writing, testing, and documenting code catches bugs faster, and improves the quality of our science

PROPER ATTRIBUTION AND CREDIT FOR CODE AUTHORSHIP

- Modern version control tracks code authorship and ensures that your name is on the code you write
- GitHub issue tracking facilitates conversation around new features and visibility into who is working on different parts of the code base

BETTER ONBOARDING EXPERIENCE FOR NEW TEAM MEMBERS

- Ramp up more quickly by bypassing the initial struggle of using a new dataset
- Benefits new graduate and undergraduate students joining the team, as well as established researchers looking at data from a new instrument

FOSTER COMMUNITY AND WIDER ADOPTION BY THE PUBLIC

- We are collecting a rich set of observations that can be used by people for years to come. As the Science Team, we are the experts and providing an easy entry point that documents best practices and lessons learned for new users working with this data.

DATA MODEL OVERVIEW

Currently we are in the very early initial stages of determining the API structure:

Prototype data model for radar data is available:

- HDF and NetCDF files data files are unpacked into xarray.Dataset objects
- Multiple felds are exposed as coordinates for easy plotting and slicing: time, range, lat, lon, distance, height, etc.

Initial documentation with brief examples as proof-of-concept.

Plans to expand to other ER2 and P3 instrumentation

GET INVOLVED

Many of us are working with a subset of IMPACTS instrumentation. We would love your help and expertise to build IMPACTS Tools into a useful package

- Contribute to wider adoption of IMPACTS data
- Speed up your own analysis
- Get experience in open source development
- Improve your coding skills
- Learn from each other
- Participate in the open science movement

CONTACT: vmcd@uw.edu

Email Victoria for more info and to stay involved as we move forward