

sfit4 - pre/post processing python package

Eric Nusbaumer, Bavo Langerock, Mathias Palm, James Hannigan, Ivan Ortega

The sfit processing environment (PE) is the machinery/tools surrounding the sfit4 core code. The ultimate goal is to:

- Create a directory structure to organize the output data
- Generate the necessary input files to run SFIT core code → **Pre-Processing**
- Execute the SFIT core code and error analysis on output → **Processing**
- Plotting results, HDF creation, analysis of retrievals → **Post-Processing**

The majority of the processing environment is written in python!

Distribution:

<https://github.com/NCAR/sfit-processing-environment>



Branch: [Official Release v3.0](#)

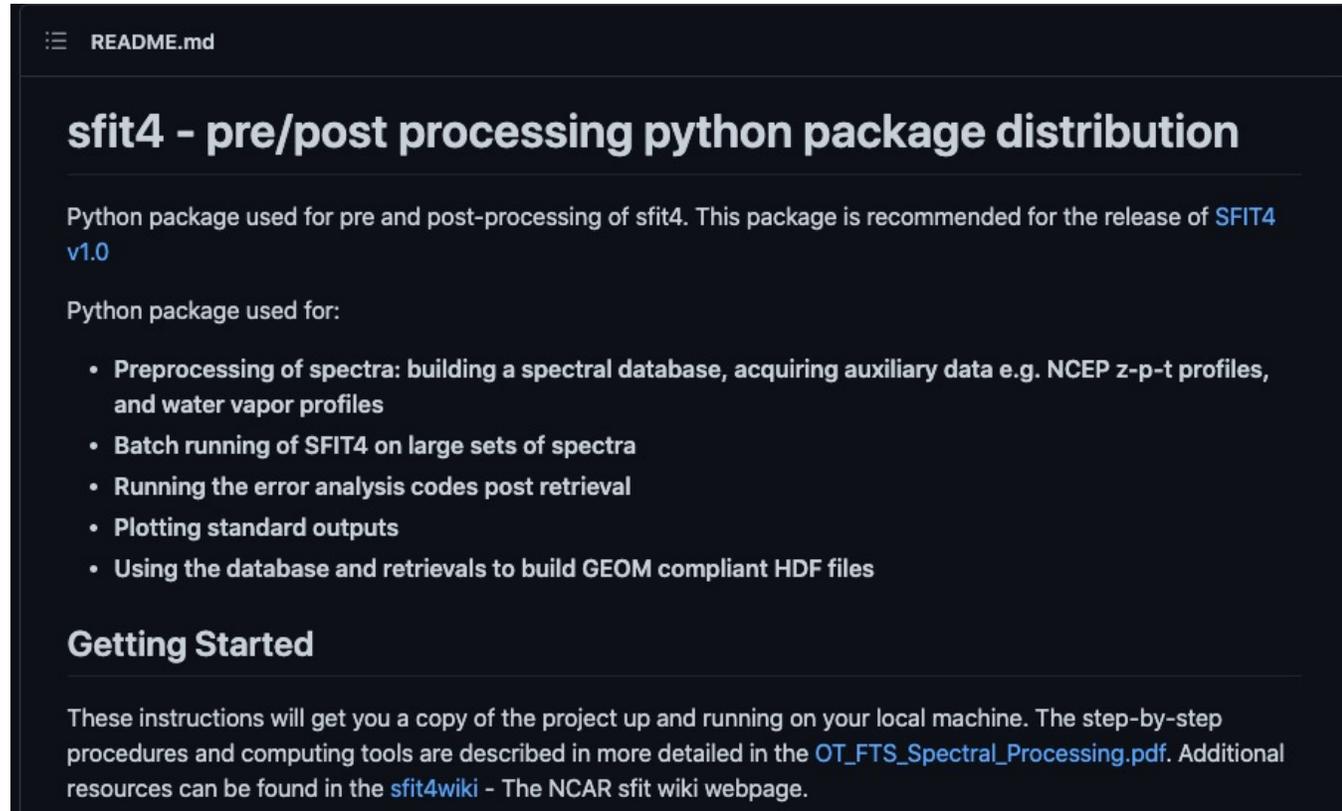
This package is recommended for the release of [SFIT4 v1.x](#)

!!!Work in progress!!!

If you have feedback/recommendations let us know.

Additional resources:

<https://wiki.ucar.edu/display/sfit4/SFIT+Processing+Environment>

A screenshot of a GitHub README file for the 'sfit4' project. The title is 'sfit4 - pre/post processing python package distribution'. The text describes it as a Python package for pre and post-processing of sfit4, recommended for SFIT4 v1.0. It lists several use cases: preprocessing of spectra, batch running on large sets of spectra, error analysis, plotting, and building GEOM compliant HDF files. It also includes a 'Getting Started' section with instructions on how to set up the project locally and references to additional resources like 'OT_FTS_Spectral_Processing.pdf' and 'sfit4wiki'.

Updates:

- Python3 is preferred
- PE comes with “default” sb input for uncertainties.
 - aligned with PROFFIT
 - The traditional single sb.ctl used in sfit4 v9.4.4 is not implemented in the latest PE
 - Default file is input in the sfit4 ctl file as file.in.sbdflt.
 - *However, one might use the v9.4.4 approach by using the flag “-o” in Layer1 or Layer 0., e.g., to run error analysis through Layer 0: sfit4Layer0.py -fe -o.*
- PE supports temperature retrieval
- PE support reading of raytrace.los and reporting in GEOMS

- PE supports creation of FTIR v2 & v3 GEOMS template discussed in NZ (see slides Ian Boyd)
 - includes LOS
 - dry airmass profile
 - more auxiliary variables (RH, wind, ...) + source fields for aux data
 - consistency in naming for a priori variables
 - fixed units for water (to align with other templates)
 - Note: source field for aux data needs to be improved.
 - Implementation of FTIR v3 template should be done in a short period of time ... NDACC could allow the simultaneous submission of v2 and v3 only for a few months
- So far PE has been tested for NCAR sites.
- If of interest we can do a quick tutorial (virtually).