

SFIT4 Version 1.0.xx Release

Official v1.0 is released. Several minor updates have followed on please use only the latest release. This follows updates after the [SFIT Workshop](#) in Boulder Nov 2019 and further updates to SFIT4 described at the 2021 IRWG meeting. The associated linelist (HITRAN 2016 & ATM 2019 + Aux files), and the compatible python processing environment are also here. This page will be updated as minor updates to V1.0 are made.

After the 2023 IRWG Meeting version v1.0.21 has been released. Along with this is a revised linelist.

SFIT4 Core Code

Core code for the official V1.0 is now SFIT4 V 1.0.21. See the [core-code](#) page for installation information and documentation. This includes the SFIT source FORTRAN code, documentation, test cases for NDACC retrievals, test cases for unique retrieval features, an installation testbed, some initial hbin and isotope input files and helper codes.

July 21, 2023. Minor bugs in spectra output and in the snr calculation in pspec have been fixed. Please download:

[sfit-core-code-V1.0.21](#)

LineList

Spectral linelist as of 20 October 2021. Includes

1. Current HITRAN 2008 lines that are still the NDACC official linelist including H₂O and CH₄ from earlier lists for CH₄ retrievals.
2. HITRAN 2016 as of November 2018.
3. ATM list from Geoff as of May 2020.
4. Pseudo linelists for many gases, for NDACC (C₂H₆, C₁O₂) and others.
5. HITRAN 2020 as of 20 October 2021, (500-8500cm⁻¹, no isotopes with fractionation less than 10⁻⁶)

SFIT4 has been updated with some new species/isotopes and will work with this new line file. Check line numbering in your reference.prf files! See the Excel sheet <LineLists_Map.xlsx> for number mapping.

SFIT4 has been updated with TIPS 2016 therefore it is not strictly compatible with other lines. TIPS can be turned on/off with the switch fw.tips = T/F.

The hbin input file only accepts the tagged form of the file and named as hbin.ctl. There are templates in the linelist <templates> subdirectory.

The linelist linked below has updated water lines as of 21 July 2023

[linelist-core_20230721](#)

CkOPUS

Allows creation of SFIT input spectra files from OPUS data file. Includes updates to station data, and forcing of field of view option for EM-27 (Thanks Maria!).

[sfit-ckopus_20200725.tar.gz](#)

SFIT4 Processing Environment

SFIT4 processing environment release version in June 2021 is V3.1.1. It has been updated to use Python V3.x and is described more at [SFIT Processing Environment](#). Use this version of the processing environment with V1.0.14 SFIT4 released at the same time. This version has revised error/sb input mechanism and can build GEOMS v3 HDF files.

[sfit4-ProcessingEnvironment-v3.1.3](#)

a Priori Profiles from WACCM

Below is the link to the a priori profiles created in June 2021 from WACCM v6 for use by the IRWG community and others.

[IRWG a priori page](#)