



Saving/Importing and Exporting HIFI Data

Steve Lord lord@ipac.caltech.edu
Updated by Russ Shipman



- It is useful to save a day's work...
 - Simplest way is “save” command
 - save(“filename”) will save ALL the variable active in HIPE to the file “filename” or just the variables x and y. save(“filename”, “x,y”)
 - restore(“filename”) restores every variable (including observation contexts)
- All products can be written as fits files.
 - Right mouse click on a product and “send to FITS”

Level2 single spectra to ASCII:

– Use “exportSpectrumToASCII”

- `exportSpectrumToASCII(ds=sds,file="filename",concat=True)`. Sds is a `HifiSpectrumDataset`.

A Level2 single spectrum (either HTP or `HifiSpectrumDataset`) can be converted to a product and written to FITS.

– `spectrum =`

`convertSingleHifiSpectrum(spectra=htp)`

– Right mouse click on a product and “send to FITS”

Open the FITS file from the “File” menu bar

- Reads in the file directly as a SimpleSpectrum.
- The created FITS file is standard FITS and can be read by standard FITS table readers (for example fv).

- HiFi User's Manual – Chapter 17
- Export to Product CLASS (via CLASS FITS) with HICLASS

- Export the level 2 spectra to a FITS file, by supplying an ObservationContext:

```
HiClassTask()(product = myobs, fileName = 'myobs.fits')
```

- Export HTP from the ObservationContext.

- Here the level 1 HTP for the HRS-V is extracted from an ObservationContext named *obs*. *htp* =
`obs.refs["level1"].product.refs["HRS-V"].product`

- Now create the FITS file:

```
HiClassTask()(product = htp, fileName = 'myhtp.fits')
```

- The Fluxes
- ObsId, BbType, BbId, SequenceNumber
- The name of the observed source,
- Frequencies
 - Rest Frequency,
 - Image Frequency,
 - Channel References,
 - Frequency Step.

(HiClass always chooses the centre of the spectrum as the reference.)
- Dates of observation, instrument (HIFI plus spectrometer and polarization).
- Pointing information.....
- Tsys – but need level 1 output for Tsys
- **not – Weights, spur table, history, etc....**
- **Header says Vlsr =0 (info is elsewhere)**

- file out myspectra.hifi m ! Prepare a CLASS file (multi)
- fits read myspectra.fits ! ingest the fits
(should get good messages) as .hifi file is made
- file in myspectra.hifi ! normal CLASS now
- find ! identify full file contents
- get 1 !
- pl ! plot

- Export to FITS (generic FITS)
 - To save a "product" to FITS – **use the GUI**
 - Produce a product from an observation context
 - Select the product in the *Variables* view and open the *Applicable* folder in the *Tasks* view. Double click on the simpleFitsWriter task to launch it.

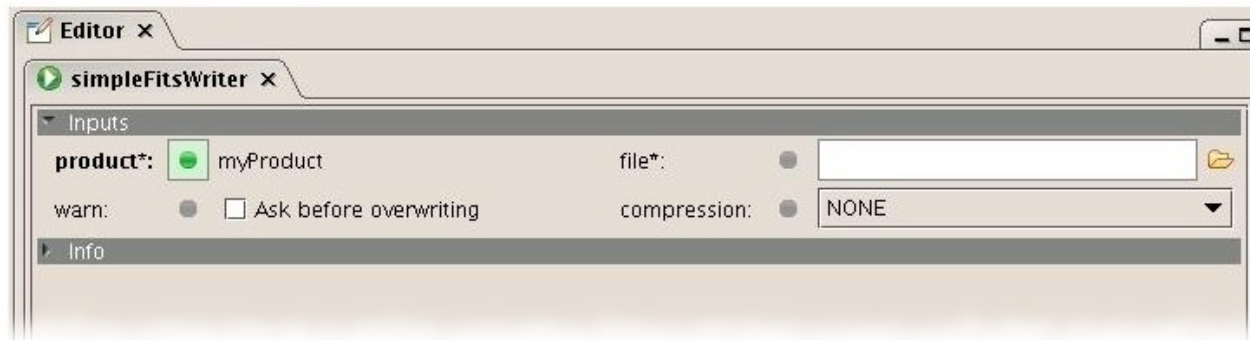


Figure 1.17. FITS save task dialogue window.

- To Connect to CASSIS
- Tools
- Plugins
- find more plugins
- get CASSIS address
- then install plugins using this
- Select observation variable
- Look at "Applicable"
- Open in Cassis