GNIRS

The nsheaders task configures the package for a particular instrument.

Data preparation accounts for low noise reads, digital averages, and co-adding. A non-linearity correction may also be applied, and variance and data quality frames calculated.
Header values are used to associate the data with a particular Mask Definition File (MDF).

Reduction can include the identification and subtraction of sky frames, as well as the application of flat fields, dark subtraction, etc.
The nscut task is called to separate data according to the MDF file attached.
The task nsreduce is typically called several times, to process the different observation types used.

A flat can be constructed from lamp data alone (nsflat), or include sky flat observations to correct for variations in response along the slit (nsslitfunc).
Flat field data are cut to size before processing and so pass through nsreduce first.
The associated bad pixel map can be used to flag other data.

Wavelength calibration is faster and more reliable thanks to improvements in core IRAF tasks. Tests with mid-IR data show that skylines can also be used for calibration.

The spatial alignment of spectra on the detector is measured with nssdist using standard star or pinhole observations.

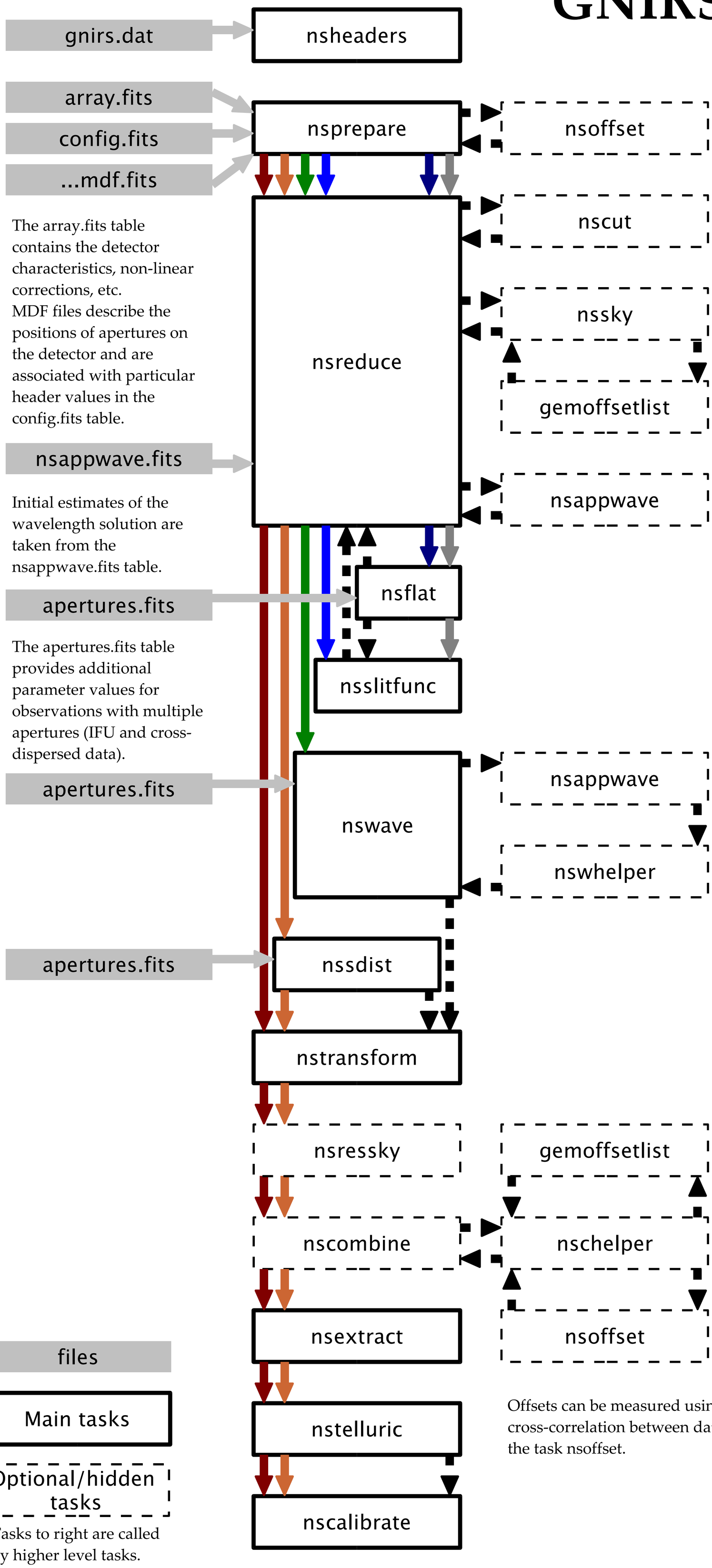
The measurements of dispersion and spatial variation are used by nstransform to produce rectified data on a uniformly sampled wavelength scale.

Optionally, sky emission can be subtracted from the data, and separate frames can be shifted and co-added.

Finally, the spectra are extracted, and the telluric standard used to produce flux calibrated spectra.

Graphics key

- Composite or internal data (flats, database entries, etc.)
- Dark frames
- Lamp flats
- Sky flats
- Arc spectra
- Telluric standard
- Object



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