

GRIS with the IFU

1. SPECIFICATIONS

The specifications of the IFU, compared to the slit are the following:

New

GRIS with the slit	GRIS with the IFU (image-slicer)
Slit: 64 arcsec \times 0.26 arcsec	Number of slices: 8
	Slice width: 0.375 arcsec (100 μ m)
	Field of view: 6 arcsec \times 3 arcsec
Slit Scan Moves in one direction Maximum field of view: 64 arcsec \times 60 arcsec	2D Field of view Scan Moves in 2 directions. Maximum field of view: 60 arcsec \times 60 arcsec
Double sampling mode: half slit width	Double sampling mode: half slice width (50 μ m). See Figure 1
Slit-jaw camera	Same
Spectropolarimetric modes	Same
Detector: 1k \times 1k	Same
Wavelength: 1 – 1.7 μ m	Same
Wavelength range examples:	
18 \AA at 10830 \AA	Same
40 \AA at 15650 \AA	Same

The IFU and the slit cannot be used simultaneously, or in the same campaign. Changing from one to the other requires an instrument change by the IAC team.

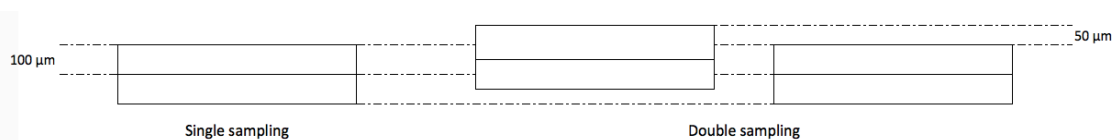


Figure 1. Single and double sampling mode with the IFU

2. OBSERVING

The IFU requires the same observing procedure than the slit system:

- Telescope polarimetric calibration
- Flat fields
- Scan
- Darks (taken automatically)

The flats have to be taken in scan mode.

The 8 simultaneous spectra are seen in the detector as shown in Figure 2. The wavelength is shifted between two slicer rows due to the particular position of the pseudo-slits.

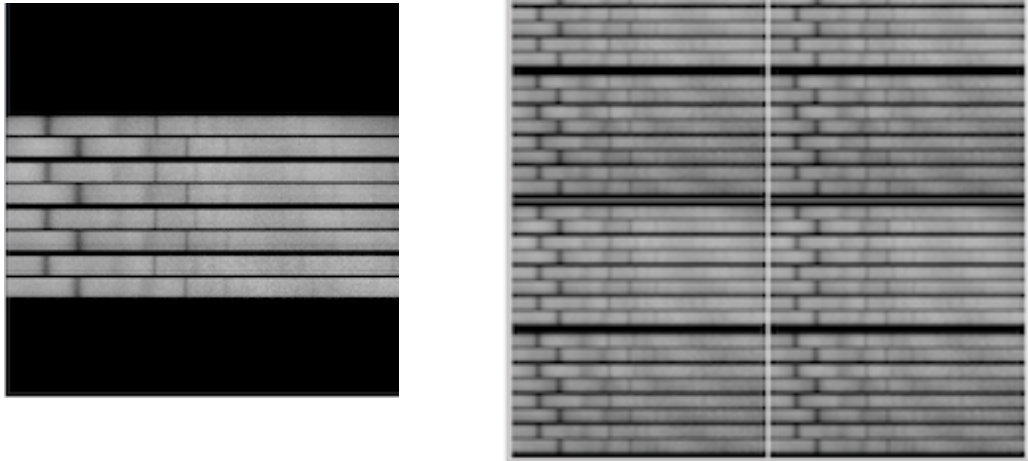


Figure 2. Simultaneous IFU spectra in spectroscopic mode (left) and spectropolarimetric mode (right).

The 2D Field of view Scan allows to move in 2 directions (see the right panel of Figure 3). The scan is done in raster mode, starting in the first column with a vertical direction, then the second column in a vertical direction and in the same sense, then the third one, etc. The cadence depends on the number of scan positions; for example a 3 x 3 scan has a cadence of 36s.

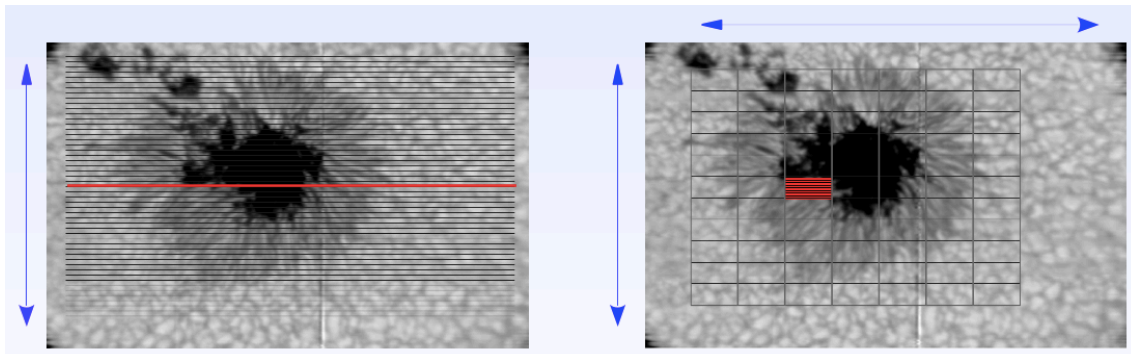


Figure 3 Slit Scan (left) compared to the 2D Field of view Scan (right). The image-slicer is represented by the red rectangle.

3. DATA REDUCTION

Similar to GRIS slit data, Manolo Collados will provide the software updated for the IFU. During the second semester of 2018 all measurements will be used to do the fine tuning of the routines. Consequently, users cannot expect that the reduction can be done in the same day, as happens with the slit data.