rgslinepos

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Abstract

Calculate the position of a center of an emission line on n the RGS camera

1 Instruments/Modes

Instrument	Mode
RGS	n.a.

2 Use

pipeline processing	no
interactive analysis	yes

3 Description

The position of the center of emission lines is provided per instrument as a function of wavelength, reflection order, and off-axis angle of the source. This task is useful, when off-axis pointings are evaluated in order to optimize the coverage of the emission spectrum by the RGS detector, e.g. if the intention is to avoid inter-chip gaps.

Output is per wavelength the CCD number and the dispersion coordinate in CHIPCOORD system.

4 Parameters

This section documents the parameters recognized by this task (if any).

Parameter	Mand	Type	Default	Constraints
wavelength	yes	real list	15	1 < `wavelength` < 45

wavelength(s) of emission line(s) in A

order	no	integer	−1	$-5 \leq$ `order` ≤ 5

reflection order

instrument	no	string	RGS1	RGS1, RGS2

instrument

deltadisp	no	real	0	$-15 \leq$ `deltadisp` ≤ 15

source off-axis angle in dispersion direction in arcmin

ocb	no	integer	3	$1 \leq$ `ocb` ≤ 5

on-chip binning; this impacts the total number of bins per chip

5 Errors

This section documents warnings and errors generated by this task (if any). Note that warnings and errors can also be generated in the SAS infrastructure libraries, in which case they would not be documented here. Refer to the index of all errors and warnings available in the HTML version of the SAS documentation.

(error)

(warning)

corrective action:

6 Input Files

none

7 Output Files

none

8 Algorithm

```
set instrument state variable for CAL

calculate angle of incidence on gratings alpha

calculate dispersion angle beta from dispersion equation
```

convert coordinates

9 Comments

References