imcrop

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Abstract

The task clips out a rectangular subregion of an image and returns this.

1 Instruments/Modes

The task is not XMM-specific.

2 Description

The task cuts out a rectangular subset of the input image and returns this as an output image. This is done in two stages:

1. If the `trimborder` parameter is set, the task first constructs the smallest possible rectangle such that no pixel outside the rectangle has a value other than zero. If `trimborder`='no', this first-stage rectangle is taken to be identical with the border of the input image.
2. The task then constructs a second, smaller, inner rectangle. The fractional relations between the occurrence of the sides of this inner rectangle and the dimensions of the first rectangle are given via the parameters `xfraclo`, `xfrachi`, `yfraclo` and `yfrachi`.

Note that, if WCS keywords are present in the input image, these are adjusted to reflect the transformations performed on the output.

3 Parameters

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

Parameter	Mand	Type	Default	Constraints
inset	yes	dataset	dummy_default	

The dataset containing the input image.

outset	no	dataset	cropped_image.ds	

The dataset to contain the (cropped) output image.

trimborder	no	boolean	yes	yes—no

Whether to trim off the any blank (zero-valued) border.

xfraclo	no	real	0.0	0.0 ≤`xfraclo`≤ 1.0

Position of the left-hand edge of the cropping rectangle expressed as a fraction of the image width (after removal of the blank border, if `trimborder` was set to 'yes').

xfrachi	no	real	1.0	0.0 ≤`xfrachi`≤ 1.0

Position of the right-hand edge of the cropping rectangle expressed as a fraction of the image width (after removal of the blank border, if `trimborder` was set to 'yes').

yfraclo	no	real	0.0	0.0 ≤`yfraclo`≤ 1.0

Position of the lower edge of the cropping rectangle expressed as a fraction of the image height (after removal of the blank border, if `trimborder` was set to 'yes').

yfrachi	no	real	1.0	0.0 ≤`yfrachi`≤ 1.0

Position of the upper edge of the cropping rectangle expressed as a fraction of the image height (after removal of the blank border, if `trimborder` was set to 'yes').

4 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.

imageAllZero *(error)*
The user request `trimborder`=yes (the default), but imcrop can't trim away the zero-valued bits as requested because there would be nothing left of the image - it is all zero-valued.

sizelessImageArray *(error)*
The dimensions of the input image array are zero.

badXclipValues *(error)*
`xfraclo` must be less than `xfrachi`.

badYclipValues *(error)*
`yfraclo` must be less than `yfrachi`.

badArrayDataType *(error)*
The data type of the input image was not recognized.

5 Input Files

1. A FITS dataset containing a 2-dimensional image array in the primary extension. The datatype of the image may be 8-bit integer, 16-bit integer, 32-bit integer, 32-bit real or

64-bit real.

6 Output Files

1. A FITS dataset containing a 2-dimensional image array in the primary extension, of the same datatype as the input array but NOT generally the same size. The output dataset and array headers contain all of the keywords (except those pertaining to DSS) of the corresponding inputs. WCS keywords, where present in the input array header, are adjusted in the output to reflect the effect of the cropping process.

7 Algorithm

References