imgdisplay

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Abstract

Wrapper task controlling the display of images with Ds9/SAOtng

1 Instruments/Modes

not applicable

2 Use

pipeline processing	no
interactive analysis	yes

3 Description

imgdisplay is a simple wrapper task around the image display program(s) Ds9/SAOtng which allows the user to control the program from the command line. In more detail, the user can:

1. Launch a new Ds9/SAOtng process
2. Terminate a running Ds9/SAOtng process
3. Load an image into a running Ds9/SAOtng process
4. Flip a displayed image around X and/or Y
5. Read region selections from a running Ds9/SAOtng

All operations are triggered via corresponding task parameters (see Sect. 4). If multiple operations are specified, the execution order follows the given sequence of task parameters below (see Sect. 4). Example:

```
imgdisplay startviewer=true viewer=ds9 withimagefile=true imagefile=freadface.fits
           flipx=true stopviewer=true
```

This launches a new Ds9 process (or connects to an already running process), displays the FITS image `fredface.fits`, flips it around the X-axis, and finally terminates the Ds9 process.

4 Parameters

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

Parameter	Mand	Type	Default	Constraints
startviewer	no	boolean	true	false|true

If `startviewer` is set to `true` **imgdisplay** attempts to establish a communication link between itself and an active Ds9/SAOtng process upon invocation. If a Ds9/SAOtng is active already, either started manually or through a previous invocation of **imgdisplay** with `stopviewer`=false, its main window must have the title[1] `ds9` or `ds9-username` for **imgdisplay** to be able to connect to it. `username` is the value of the environment variable `LOGNAME` which is usually the user's login name. If no running Ds9/SAOtng could be found **imgdisplay** spawns one with the window title `SAOtng-username` such that subsequent task invocations can find and connect to this process. Please note: Ds9/SAOtng are big programs, even on modern workstations is can take up to several seconds before the main window appears on the screen.

`startviewer=true` is a prerequisite that any given additional commands can succeed. If set to "false" the task exits immediately — all following commands are ignored in this case.

withimagefile	no	boolean	false	false|true

A boolean switch determining whether a new image should be loaded into Ds9/SAOtng. If set to "true" the name of the image data set must be given via the parameter `imagefile`. When a new image is loaded any previously displayed one is lost.

imagefile	no	string		name of existing image data set

The name of the image data set to load into Ds9/SAOtng when `withimagefile` is set to "true".

withregion	no	boolean	false	false|true

A boolean switch determining whether region specifications should be read from Ds9/SAOtng and stored in the `regions` parameter. Not applicable to interactive usage.

regions	no	string list		

This serves as an output parameter to hold region specifications read from Ds9/SAOtng when requested with. Not applicable to interactive usage. `withregion`=true.

withregiontable	no	boolean	false	false|true

A boolean switch determining whether the contents of an *CXC-region file*[1] should be displayed in the form of markers on top of the currently displayed image. If set to `true`, the below parameter `regiontable` must be given the name of the region table.

[1] Please note: When launching Ds9/SAOtng the main window's title can be set via the `title`-command line parameter, e.g. `ds9 -title ds9-fred`

regiontable	no	string		name of existing CXC-region table

The name of the *CXC-region table*[1] to be visualized.

flipx	no	boolean	false	false|true

A boolean switch determining whether the image currently displayed in Ds9/SAOtng should be flipped around the X-axis.

flipy	no	boolean	false	false|true

A boolean switch determining whether the image currently displayed in Ds9/SAOtng should be flipped around the Y-axis.

viewer	no	string		`ENV` or name of viewer executable

A string determining which image viewer shall be used: SAOtng or Ds9. `viewer` can also be assigned the value `ENV` in which case the environment variable

`SAS_IMAGEVIEWER`

must specify either of the two supported programs. Please note: If `viewer` is just given the name of the viewer executable it must be reachable via the `PATH` environment variable. However, `viewer` may also contain the full path to the executable, e.g. `/usr/local/bin/ds9`.

stopviewer	no	boolean	false	false|true

A boolean switch determining whether a running Ds9/SAOtng process should be terminated.

withcommands	no	boolean	false	false|true

Controlling boolean switch for `commands` parameter.

commands	no	list of strings		list of valid Ds9/SAOtng commands

If `withcommands` is set to `true` the value is supposed to be list of Ds9/SAOtng commands that are to be send to an already spawned image displayer. E.g. `withcommands=true commands="zoom to 2"` will set the zoom factor in the currently displayed image to 2.

withreceive	no	boolean	false	false|true

Controlling boolean switch for `receive` parameter.

receive	no	list of strings		

This is an output parameter which is only useful in the context of metatask programming. If `withreceive` is set to `true` output from a running Ds9/SAOtng process (resulting from a preceding execution of commands via `withcommands`/`commands`) shall be collected in this parameter as a list of strings. The parameter is not accessible as part of **imgdisplay**'s parameter dialog.

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.

(fatal)
Ds9/SAOtng cannot be spawned because it is either not installed on the system or inaccessible via the `PATH` environment variable

6 Comments

- **imgdisplay** is mainly intended to be called from **xmmselect** but is useful for direct usage as well

7 Future developments

Future version will:

- offer more Ds9/SAOtng control features, e.g. selection of color tables, zooming, frame switching etc.

References

[1] J. McDowell and A. Rots. FITS REGION Binary Table Design. Technical Report ASC-FITS-REGION-1.0, Chandra Science Center, March 1998. Found at the URL: http://hea-www.harvard.edu/~jcm/asc/docs/asc/region.ps.