

ctools - Feature #2725

Add setter for exclusion regions

11/08/2018 12:08 PM - Specovius Andreas

Status:	Closed	Start date:	11/08/2018
Priority:	Normal	Due date:	
Assigned To:	Specovius Andreas	% Done:	100%
Category:		Estimated time:	15.00 hours
Target version:	1.6.0		
Description <p>There are ctools and cscripts that allow the use of exclusion regions. Currently the only way to involve them is to provide the path to region files on disk. It would be good to allow the user to set these regions directly from within python scripts.</p> <p>Scripts that allow the user to provide exclusion regions are:</p> <ul style="list-style-type: none">• ctskymap• csphagen• cslightcrv• csphasecrv			

History

#1 - 11/08/2018 12:46 PM - Specovius Andreas

- Status changed from New to In Progress
- % Done changed from 0 to 20

For **ctskymap** I added setter and getter for the exclusion map object. In `setup_maps()` it is now tested if the exclusion map is empty or has already been filled. If the map has already been filled it is adjusted for the fov to fit the fov of the counts map. As this functionality equals the one used in `setup_exclusion_map_fits()` it is moved to the new function `adjust_exclusion_map()` to avoid redundancy.

#2 - 11/08/2018 03:56 PM - Specovius Andreas

Csphagen internally stores the exclusion map as a `GSkyRegionMap` object - not as a `GSkyMap` object like ctskymap does.

For **csphagen** I added a combined setter and getter for the exclusion map object. Inside, the internal parameter that stores the exclusion map is initialised to be a `GSkyRegionMap`. As a `GSkyRegionMap` can be initialised from a `GSkyRegion` subclass and a `GSkyMap` object, obviously principally both can also be provided to the setter.

#3 - 11/08/2018 03:56 PM - Specovius Andreas

- % Done changed from 20 to 40

#4 - 11/08/2018 04:25 PM - Specovius Andreas

For **cslightcrv** and **csphasecrv** things are a little more complicated as the cscripts themselves do not handle the exclusion region. It is indeed handled by the `obsutils` module, which is called from inside the cscripts. In these cscripts the exclusion regions are generally only used for on/off analyses.

To **cslightcrv** I added a class parameter `_excl_reg_map` initialised to `None` but fillable via a newly implemented combined setter and getter function, similar to `csphagen`.

I also modified the **obsutils** module to pipe the exclusion region to `csphagen` if `_excl_reg_map` is present and has been set.

#5 - 11/08/2018 04:25 PM - Specovius Andreas

- % Done changed from 40 to 70

#6 - 11/08/2018 04:41 PM - Specovius Andreas

- % Done changed from 70 to 90

To **csphasecrv** I added a class parameter `_excl_reg_map` initialised to None but fillable via a newly implemented combined setter and getter function, equally to `cslightcrv`.

#7 - 11/08/2018 04:42 PM - Specovius Andreas

- Status changed from In Progress to Feedback

- % Done changed from 90 to 100

All tools that feature an `inexclusion` parameter have now been modified and I think the code is ready for review.

#8 - 11/09/2018 10:47 AM - Specovius Andreas

Note that there is now another issue dealing with the exclusion regions: #2730 (adapt tools to use `GSkyRegions` containers instead of maps directly).

#9 - 12/11/2018 03:31 PM - Knödlseider Jürgen

- Status changed from Feedback to Pull request

- Target version set to 1.6.0

I changed the name of the methods to `exclusion_map`, and all method now set or return an instance of `GSkyRegionMap`, i.e. also for `ctskymap`. This is already one step towards the provision of a more homogenous interface.

#10 - 12/12/2018 09:36 AM - Knödlseider Jürgen

- Status changed from Pull request to Closed

Merged into devel.

#11 - 12/12/2018 02:52 PM - Specovius Andreas

The implementation of `csphagen.exclusion_map(self)` overwrites the implementation of `csphagen.exclusion_map(self, object)`. This is C-style but unfortunately not possible for Python. To work around that I implemented the combined getter and setter.