

## ctools - Action #3170

### Have cssens handle diffuse map cube

03/02/2020 10:11 AM - Martin Pierrick

<b>Status:</b>	Closed	<b>Start date:</b>	03/02/2020
<b>Priority:</b>	Normal	<b>Due date:</b>	
<b>Assigned To:</b>	Martin Pierrick	<b>% Done:</b>	100%
<b>Category:</b>		<b>Estimated time:</b>	1.00 hour
<b>Target version:</b>	2.0.0		
<b>Description</b>			
The cssens script does not currently handle map cubes. Need to implement a calculation of the source flux specific to that kind of spatial model.			

#### History

##### #1 - 03/02/2020 11:49 AM - Martin Pierrick

- Status changed from New to Pull request

- % Done changed from 0 to 90

Code available in branch 3170-cssens-add-mapcubes of my gitlab fork

Just added a few lines of code to precompute the flux in each map of the map cubes and have source flux computed as these map fluxes scaled by spectral normalization.

Not tested extensively.

Note the addition of a flag to tell if the source handled is a map cube or not (not sure you want it done that way).

##### #2 - 03/04/2020 06:04 PM - Martin Pierrick

Wait a minute... There seems to be a problem when handling a mapcube with multiprocessing. I get this message:

ValueError: \*\*\* ERROR in GNodeArray::set\_value(double&): Invalid value. Attempting to set interpolating value without having any nodes.

Interpolation can only be done if nodes are available

Is it that the mapcube spectrum is not propagated over threads, so when trying to evaluate the mapcube spectrum it fails ? Currently investigating the bug...

Updated: alternative possibility is that the cube was not loaded

##### #3 - 03/04/2020 06:09 PM - Martin Pierrick

- Status changed from Pull request to In Progress

##### #4 - 03/06/2020 03:02 PM - Martin Pierrick

So the problem was indeed that the information set by the method `set_mc_cone()` in `GModelSpatialDiffuseCube` is currently lost when the class is pickled during multiprocessing (see issue #3179). I am currently testing a new version where the existence of the map cube spectrum is checked in each thread, in the call to the `get_sensitivity()` method.

##### #5 - 06/26/2020 10:43 AM - Martin Pierrick

Quick update on this... There is on branch 3170-cssens-add-mapcubes on my gitlab fork a working version of the code. It can be integrated if needed but feedback or further testing will be required for sure as I have already encountered some unsatisfactory results when using the tool on halos. The issue is not necessarily related to the implementations I made and may have to do with convergence of the sensitivity estimate. To be investigated...

**#6 - 05/07/2021 11:06 PM - Knödseder Jürgen**

- *Target version set to 2.0.0*

**#7 - 06/02/2022 02:32 PM - Knödseder Jürgen**

- *Status changed from In Progress to Closed*

- *% Done changed from 90 to 100*

I merged the code into devel.