

## ctools - Bug #1850

### ctbin fails with segmentation fault

08/29/2016 02:56 PM - Mayer Michael

<b>Status:</b>	Closed	<b>Start date:</b>	08/29/2016
<b>Priority:</b>	High	<b>Due date:</b>	
<b>Assigned To:</b>	Mayer Michael	<b>% Done:</b>	100%
<b>Category:</b>		<b>Estimated time:</b>	0.00 hour
<b>Target version:</b>	1.2.0		
<b>Description</b>			
<p>I realised that in the current version of ctbin, we get a segmentation fault when running on an observation container with different energy thresholds.</p> <p>The problem occurs in line ctbin.cpp:526, where we query for the usage of the energy bin, depending on the event energy. The variable iebin is not checked before checking usage[iebin]. However, in case the cube is only a subset of the complete energy range, an event energy may be outside the cube energy range. Consequently the line before</p> <pre>int iebin = m_ebounds.index(event-&gt;energy());</pre> <p>can result in iebin=-1. Therefore, we need to add a check and replace the if statement by:</p> <pre>if (iebin == -1    !usage[iebin]) {     num_outside_ebds++;     continue; }</pre> <p>Note: we need to make sure that the first part of the condition is evaluated first. I recall we had some issues with the order how c++ executes the    statements.</p>			

### History

#### #1 - 08/31/2016 10:25 AM - Mayer Michael

This problem can be reproduced by changing the energy range of one of the ctbin unit tests to e.g. 0.5-20 TeV instead of using 0.1-100 TeV throughout the tests.

#### #2 - 08/31/2016 01:41 PM - Mayer Michael

- Status changed from New to Pull request

- Assigned To changed from Knödseder Jürgen to Mayer Michael

I fixed the problem using the above solution. I also added an additional unit test for ctbin with a different energy range (which would have failed before).

To avoid merging conflicts, I added the changes also on branch *1846-use-ctobservation-base-class* (which is the same as for #1846).

#### #3 - 09/26/2016 10:03 AM - Knödseder Jürgen

- Status changed from Pull request to Closed

Merged into devel.

#### #4 - 03/03/2017 10:52 AM - Knödseder Jürgen

- % Done changed from 0 to 100