ctools - Bug #1850

ctbin fails with segmentation fault

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

Status:	Closed		**Start date:**	08/29/2016
Priority:	High		**Due date:**	
Assigned To:	Mayer Michael		**% Done:**	100%
Category:			**Estimated time:**	0.00 hour
Target version:	1.2.0			

Description

I realised that in the current version of ctbin, we get a segmentation fault when running on an observation container with different energy thresholds.
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

int iebin = m_ebounds.index(event->energy());

can result in iebin=-1. Therefore, we need to add a check and replace the if statement by:

if (iebin == -1 || !usage[iebin]) {
    num_outside_ebds++;
    continue;
}

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.

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 Knödlseder 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 - Knödlseder Jürgen

- Status changed from Pull request to Closed

Merged into devel.

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

- *% Done changed from 0 to 100*