ctools - Support #1873

cssens gets stuck for second energy bin

10/25/2016 11:30 AM - Yang Lili

Status:	Closed	**Start date:**	10/25/2016
Priority:	Normal	**Due date:**	
Assigned To:	Knödlseder Jürgen	**% Done:**	100%
Category:		**Estimated time:**	0.00 hour
Target version:	1.2.0		

Description

At first, I was trying to use this tool to get the sensitivity for diffuse sources, but it didn't work. In case I didn't do anything wrong or stupid, I tried crab to see how cssens works, as seen below

1. cssens
   Calibration database [prod2]
   Instrument response function [South_0.5h] South_50h
   Effective exposure time (s) [180000.0] 18000
   Radius of ROI (deg) [5.0]
   Input model XML file [$CTOOLS/share/models/crab.xml]
   Source name [Crab]
   Lower energy limit (TeV) [0.020] 0.1
   Upper energy limit (TeV) [200.0] 100
   Number of energy bins for differential sensitivity computation [21]

Then the calculation keeps repeating in the first energy bin, giving the results below,

loge,emin,emax,crab_flux,photon_flux,energy_flux,sensitivity
-0.928571428571,0.1,0.138949549437,0.0180332909182,4.0821996488e-12,7.64194439176e-13,2.32078640804e-12

It looks the calculation can not move on after the first energy bin.

```
2016-10-25T09:26:47: =====================
2016-10-25T09:26:47: | Simulate observation |
2016-10-25T09:26:47: =====================
2016-10-25T09:26:47: === CTA observation (id=000000) ===
2016-10-25T09:26:47:  Simulation cone ...........: RA=266.405 deg, Dec=-28.9362 deg, radius=5.5 deg
2016-10-25T09:26:47:  Time interval .............: 3.15576e+08 - 3.15594e+08 s
2016-10-25T09:26:47:  Photon energy range .......: 138.95 GeV - 138.95 GeV
2016-10-25T09:26:47:  Event energy range ........: 138.95 GeV - 138.95 GeV
2016-10-25T09:26:47:   Simulation area ..........: 3.77263e+09 cm2
2016-10-25T09:26:47:   Use model ................: Crab
2016-10-25T09:26:47:   Normalization ............: 1 [Crab]
2016-10-25T09:26:47:   Flux .....................: 0 [Crab] photons/cm2/s
2016-10-25T09:26:47:   Normalized flux ..........: 0 [Crab] photons/cm2/s
2016-10-25T09:26:47:   MC source events .........: 0 (all source models)
2016-10-25T09:26:47:  Photon energy range .......: 138.95 GeV - 138.95 GeV
2016-10-25T09:26:47:  Event energy range ........: 138.95 GeV - 138.95 GeV
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2016-10-25T09:26:47:  Event energy range ........: 138.95 GeV - 138.95 GeV
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2016-10-25T09:26:47:  MC source events .........: 0 (all source models)
2016-10-25T09:26:47: MC source photons .........: 0 [Crab]
2016-10-25T09:26:47: MC source events ..........: 0 [Crab]
2016-10-25T09:27:13: MC events outside ROI .....: 0
2016-10-25T09:27:13: MC background events ......: 0
2016-10-25T09:27:13: MC events .................: 0 (all models)
2016-10-25T09:27:13:
```

History

#1 - 11/10/2016 04:48 PM - Knödlseder Jürgen

- Status changed from New to In Progress

- Assigned To set to Knödlseder Jürgen

- Target version set to 1.2.0

Thanks for reporting that. It seems that in a recent refactoring of the code the handling of the energy boundaries got corrupted. I will look into that.

#2 - 11/10/2016 09:42 PM - Knödlseder Jürgen

- Status changed from In Progress to Feedback

- % Done changed from 0 to 100

I fixed the problem, code is merged into devel.

I keep the status on feedback until you have verified that the code also works for you as expected.

#3 - 11/10/2016 09:42 PM - Knödlseder Jürgen

- Subject changed from cssens to cssens gets stuck for second energy bin

#4 - 02/26/2017 08:46 PM - Knödlseder Jürgen

- Status changed from Feedback to Closed