

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:	Knödlseher 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
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
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2016-10-25T09:26:47: Normalization .....: 1 [Crab]
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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
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
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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: 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 - Knödseder Jürgen

- Status changed from New to In Progress

- *Assigned To set to Knödseder 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 - Knödseder 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 - Knödseder Jürgen

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

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

- *Status changed from Feedback to Closed*