ctools - Support #3071

define a custom spectral model

11/22/2019 05:40 PM - Nigro Cosimo

Status:	Closed	Start date:	11/22/2019
Priority:	Normal	Due date:	
Assigned To	:	% Done:	100%
Category:		Estimated time:	0.00 hour
Target version:			
Description			
Hello,			
reading through the spectral components available in ctools http://cta.irap.omp.eu/ctools/users/user_manual/models_spectral.html it seems that it is not possible to use a custom model. What is available in this direction is just a Composite model assembled from the predefined models or a FileFunction that can only be scaled in amplitude. As I am trying to reproduce some results from a paper I'd like to have a way to plug the exact same models in the likelihood analysis. More specifically I would like to have a LogParabola with log10(E / E_0) in the second spectral index and a LogParabola with an exponential cutoff. What would be the way to proceed?			
Thanks for the support.			

History

#1 - 11/22/2019 06:02 PM - Tibaldo Luigi

Hi Cosimo

I am under the impression that you can do what you want with the base models provided in ctools

- regarding the log-parabola defined in terms of beta * log10 (reference analysis) vs eta * ln (ctools), you can easily achieve your purpose with the standard ctools models; just remember that beta * log10 (E/E0) = beta/ln(10) ln(E/E0), therefore you can compare the ctools results with your reference analysis by a simple multiplication beta = eta * ln(10) (same goes for the uncertainty);
- for the log-parabola with exponential cutoff perhaps I'm missing your point, but isn't what you are trying to define exactly what you get using the
 multiplicative type model (<u>http://cta.irap.omp.eu/ctools/users/user_manual/models_spectral.html#multiplicative-model</u>) with first component given
 by a log-parabola (<u>http://cta.irap.omp.eu/ctools/users/user_manual/models_spectral.html#multiplicative-model</u>) and the second component being the
 exponential (<u>http://cta.irap.omp.eu/ctools/users/user_manual/models_spectral.html#multiplicative-model</u>) of a power law with index fixed to 1?

#2 - 12/04/2019 03:35 PM - Nigro Cosimo

Hi Luigi

sorry for the belated reply and thanks for the suggestions. I'll try to implement it.

You can close the feature request,

Thanks again.

Cosimo

#3 - 12/04/2019 03:39 PM - Tibaldo Luigi

- Tracker changed from Feature to Support
- Status changed from New to Resolved
- % Done changed from 0 to 100

changed category to support and set to solved based on feedback from Cosimo

#4 - 02/07/2020 04:52 PM - Knödlseder Jürgen

- Status changed from Resolved to Closed