

GammaLib - Bug #3731

Make COMPTEL IAQ weighting compliant with COMPASS

06/14/2021 10:02 AM - Knödlseider Jürgen

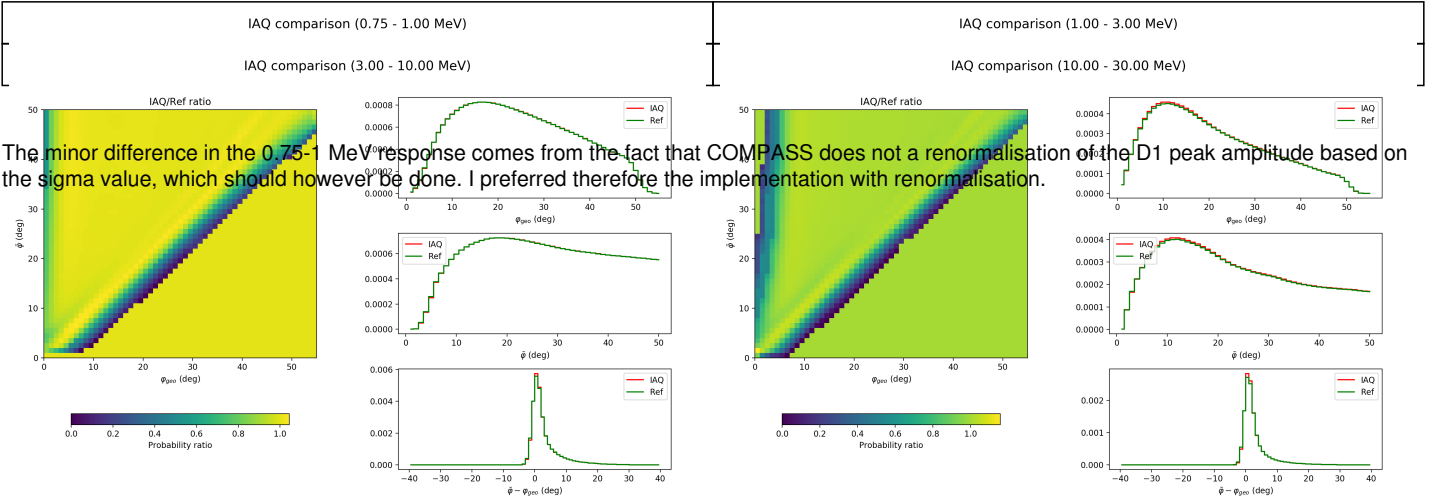
Status:	Closed	Start date:	06/14/2021
Priority:	High	Due date:	
Assigned To:	Knödlseider Jürgen	% Done:	100%
Category:		Estimated time:	0.00 hour
Target version:	2.0.0		
Description			
It turned out that the COMPTEL IAQ weighting was not compliant with the COMPASS software.			

History

#1 - 06/18/2021 01:00 PM - Knödlseider Jürgen

- File comparison_20210617_0.75-1MeV.png added
- File comparison_20210617_1-3MeV.png added
- File comparison_20210617_3-10MeV.png added
- File comparison_20210617_10-30MeV.png added
- Status changed from New to Pull request
- % Done changed from 0 to 90

It turned out that the peak amplitudes of the D2 response were not divided by the square root of 2 pi multiplied by sigma. This was corrected. I also included the absorption in the veto shield and the PSD selection efficiency in the computation, and did a few minor adjustments to reproduce exactly the COMPASS energy thresholds. This gave the following results:



The minor difference in the 0.75-1 MeV response comes from the fact that COMPASS does not a renormalisation of the D1 peak amplitude based on the sigma value, which should however be done. I preferred therefore the implementation with renormalisation.

#2 - 06/24/2021 05:56 PM - Knödlseider Jürgen

- Status changed from Pull request to Closed
- % Done changed from 90 to 100

Files

comparison_20210617_0.75-1MeV.png	158 KB	06/18/2021	Knödlseider Jürgen
comparison_20210617_3-10MeV.png	161 KB	06/18/2021	Knödlseider Jürgen
comparison_20210617_10-30MeV.png	164 KB	06/18/2021	Knödlseider Jürgen
comparison_20210617_1-3MeV.png	175 KB	06/18/2021	Knödlseider Jürgen