

## GammaLib - Action #573

Feature # 104 (Closed): Refactor CTA response class

### Introduce GCTAAeff class.

10/16/2012 06:15 PM - Knödseder Jürgen

<b>Status:</b>	Closed	<b>Start date:</b>	07/20/2012
<b>Priority:</b>	Normal	<b>Due date:</b>	
<b>Assigned To:</b>	Knödseder Jürgen	<b>% Done:</b>	100%
<b>Category:</b>		<b>Estimated time:</b>	0.00 hour
<b>Target version:</b>	1.0.0		
<b>Description</b>			
The GCTAAeff class should provide an abstract interface for the CTA effective area.			
Implementations of this class should read effective area data in various formats, such as performance files, ARFs, and IRFs in CALDB format.			

### History

#### #1 - 10/16/2012 06:17 PM - Knödseder Jürgen

- Description updated

#### #2 - 10/16/2012 10:55 PM - Knödseder Jürgen

- Status changed from New to In Progress

#### #3 - 10/17/2012 12:30 AM - Knödseder Jürgen

- % Done changed from 0 to 30

I just implemented and committed (hess branch) an initial version of the abstract base class GCTAAeff and the implementation GCTAAeff2D.

The abstract base class GCTAAeff defines the general interface to a CTA effective area response.

GCTAAeff2D implements a 2D response format, where effective area is given as function of energy and offset angle. The class makes use of GCTAResponseTable which implements an interface to the Fermi/LAT like response functions. The GCTAResponseTable implement bi-linear interpolation in  $\log_{10}(\text{energy})$  and offset angle.

Implementation of other effective area interfaces are still missing. We want to read Konrad's performance tables (GCTAAeffPerfTable) and 1DC ARF files (GCTAAeffARF).

The loading of the effective area should be done by the GCTAResponse class. As we do not anticipate for now that external response functions are use, we probably do not need a registry for the derived GCTAAeff classes.

#### Note:

We may think now of moving GCTAResponseTable to the GammaLib core as GResponseTable, because the format is used by different instruments.

#### #4 - 12/01/2012 02:00 AM - Knödseder Jürgen

- Status changed from *In Progress* to *Feedback*
- Remaining (hours) set to 0.0

**#5 - 12/01/2012 02:04 AM - Knödlseher Jürgen**

- % Done changed from 30 to 100
- Estimated time set to 0.00

The GCTAResponse class has been reworked to handle the effective area classes.

**#6 - 01/31/2013 04:48 PM - Knödlseher Jürgen**

- Status changed from *Feedback* to *Closed*

**#7 - 05/15/2013 09:27 AM - Knödlseher Jürgen**

- Target version changed from *HESS sprint #1* to *00-08-00*

**#8 - 12/11/2013 10:18 PM - Knödlseher Jürgen**

- Target version deleted (*00-08-00*)

**#9 - 07/11/2014 04:15 PM - Knödlseher Jürgen**

- Target version set to *1.0.0*