

## GammaLib - Change request #1197

### Gammlib should check consistency of model and observation xmls

05/09/2014 08:27 AM - Lu Chia-Chun

<b>Status:</b>	New	<b>Start date:</b>	05/09/2014
<b>Priority:</b>	High	<b>Due date:</b>	
<b>Assigned To:</b>	Knödseder Jürgen	<b>% Done:</b>	0%
<b>Category:</b>		<b>Estimated time:</b>	0.00 hour
<b>Target version:</b>			
<b>Description</b>			
It took me quite a while to find out that I put mismatched instrument names in observation and model xml files so gammalib can't find the corresponding data for the model. (I put "HESS" in observation xml and "CTA" in model xml.)			
In this case, a warning message should be thrown to warn users.			
<b>Related issues:</b>			
Related to ctools - Action # 1288: ctmodel doesn't work for GCTABackground3D		<b>Rejected</b>	<b>07/21/2014</b>

#### History

##### #1 - 05/09/2014 08:43 AM - Lu Chia-Chun

- File *Avg\_Crab\_model\_Gaus.xml* added

##### #2 - 05/09/2014 08:44 AM - Lu Chia-Chun

- File *Avg\_Crab\_obs.xml* added

##### #3 - 05/09/2014 08:45 AM - Lu Chia-Chun

- File *ctlike.log* added

##### #4 - 06/16/2014 11:22 AM - Knödseder Jürgen

- Tracker changed from *Bug* to *Change request*

##### #5 - 07/21/2014 02:24 PM - Knödseder Jürgen

I guess the logic should be to check whether for every specified observation there is a corresponding background model. This would imply to hardwire some logic in the code that knows what model types are background model for a given instrument.

Maybe this can be done by searching the GModels container for GModelData type models with a specific instrument identifier. This would at least work for CTA and alike. The same logic can apply for COMPTEL.

For Fermi-LAT things are more complicated, as a source model is used to model the background. Here one would need to check for diffuse model components, without any guarantee that we can unambiguously identify the correct component. Maybe we should not apply this test for Fermi-LAT?

In any case, it should lead to a simple warning in the log file, and the executing of clike should continue, so that users could use clike w/o background model.

Maybe this is best implemented by a ctools support function, so that other code (such as ctmodel) can use the same code. Alternatively, one would add a method to gammalib to do the job (e.g. GObservations::check\_model(const GLog& log)) that returns a flag and that dumps warning to a logger.

**#6 - 07/21/2014 10:23 PM - Lu Chia-Chun**

I think checking "for every specified observation there is a corresponding background model" is a very nice way, but I didn't realize it's so complicated to implement such a function in gammalib.

An alternative instead of adding a lot of check loops in the code is to build a troubleshooting database. I don't think I will fall into the same trap the third time. I've learned it, but it's a mistake people can easily make and most end users probably don't have time and ability to dive into the code to find the problem.

Knödseder Jürgen wrote:

I guess the logic should be to check whether for every specified observation there is a corresponding background model. This would imply to hardwire some logic in the code that knows what model types are background model for a given instrument.

Maybe this can be done by searching the GModels container for GModelData type models with a specific instrument identifier. This would at least work for CTA and alike. The same logic can apply for COMPTEL.

For Fermi-LAT things are more complicated, as a source model is used to model the background. Here one would need to check for diffuse model components, without any guarantee that we can unambiguously identify the correct component. Maybe we should not apply this test for Fermi-LAT?

In any case, it should lead to a simple warning in the log file, and the executing of ctlike should continue, so that users could use ctlike w/o background model.

Maybe this is best implemented by a ctools support function, so that other code (such as ctmodel) can use the same code. Alternatively, one would add a method to gammalib to do the job (e.g. GObservations::check\_model(const GLog& log)) that returns a flag and that dumps warning to a logger.

**Files**

---

Avg_Crab_model_Gaus.xml	1.81 KB	05/09/2014	Lu Chia-Chun
Avg_Crab_obs.xml	424 Bytes	05/09/2014	Lu Chia-Chun
ctlike.log	15.4 KB	05/09/2014	Lu Chia-Chun