

## ctools - Feature #1037

### Implement ctools to combine run-wise IRFs for fast binned likelihood analysis

12/11/2013 10:09 AM - Deil Christoph

<b>Status:</b>	Closed	<b>Start date:</b>	12/11/2013
<b>Priority:</b>	Normal	<b>Due date:</b>	
<b>Assigned To:</b>	Lu Chia-Chun	<b>% Done:</b>	100%
<b>Category:</b>		<b>Estimated time:</b>	0.00 hour
<b>Target version:</b>	00-08-00		

#### Description

In HAP we usually combine all runs into total counts and exposure and exposure-averaged PSF before fitting the morphology and spectrum.

This loses some information, but means a factor 100 speed-up for a binned likelihood fit for 100 runs.

Plus there might be problems with having too many free background parameters when fitting per-run data with per-run IRFs.

So we should develop ctools to combine IRFs (and maybe counts).

As a start it could be a two-page Python script ... it's basically summing up.

In optical and X-ray astronomy this is known as co-adding, and there are e.g. tools to co-add PHA, ARF and RMF files in CIAO:

Example and explanation of tool: <http://cxc.harvard.edu/ciao/threads/coadding/>

Formulae: <http://cxc.harvard.edu/ciao/download/doc/combine.pdf>

#### History

##### #1 - 12/11/2013 10:33 AM - Deil Christoph

- Subject changed from *Implement ctools to combine run-wise event lists and IRFs to Implement ctools to combine run-wise IRFs for fast binned likelihood analysis*

- Description updated

##### #2 - 12/11/2013 08:21 PM - Knödseder Jürgen

- Target version set to 2nd coding sprint

##### #3 - 12/13/2013 07:46 AM - Deil Christoph

- Description updated

##### #4 - 12/13/2013 08:01 AM - Deil Christoph

- Description updated

##### #5 - 01/29/2014 01:50 AM - Knödseder Jürgen

- Status changed from *New* to *In Progress*

##### #6 - 07/08/2014 04:35 PM - Lu Chia-Chun

- Status changed from *In Progress* to *Resolved*

Replaced by #1249 #1250

##### #7 - 07/19/2014 02:15 AM - Knödseder Jürgen

- Target version changed from 2nd coding sprint to 00-08-00

##### #8 - 07/20/2014 11:18 PM - Knödseder Jürgen

- Status changed from *Resolved* to *Closed*

- % Done changed from 0 to 100

