

P305 - Pass8 FITS data product generation

status: **Complete**

last update: 28 June 2019

This page is a record of the configuration and execution of the P305 reprocessing project, generation FITS files from the P301 MERIT files.

Notice: there is now a [JIRA](#) for this task. Please check here for operational notes.

Pipeline tasks

- P305-FITS - This [task](#) reads new P301 MERIT and produces fits files, FT1 + LS1 + EXTENDEDFT1 + EXTENDEDLS1

Datafile names, versions and locations

Data file version numbers for this reprocessing will begin with v305.

XROOT location and file naming

Location template:

```
/glast/Data/Flight/Reprocess/<reprocessName>/<dataType>
```

Locations for P305:

```
/glast/Data/Flight/Reprocess/P305/ft1
/glast/Data/Flight/Reprocess/P305/extendedft1
/glast/Data/Flight/Reprocess/P305/ls1
/glast/Data/Flight/Reprocess/P305/extendedls1
```

File naming:

Data Type	aka	Send to FSSC	Naming template
EXTENDEDFT1		No	gll_xp_p<procVer>_r<run#>_<version>.fit
FT1	LS-002	Yes	gll_ph_p<procVer>_r<run#>_<version>.fit
EXTENDEDLS1		No	gll_xe_p<procVer>_r<run#>_<version>.fit
LS1	LS-001	Yes	gll_ev_p<procVer>_r<run#>_<version>.fit

Note: 'procVer' is a field added to the file name (and the keyword "PROC_VER" in the primary header) added to the FFD 5/12/2010. Ref: http://fermi.gsfc.nasa.gov/ssc/dev/current_documents/Science_DP_FFD_RevA.pdf

Example:

```
root://glast-rdr.slac.stanford.edu//glast/Data/Flight/Reprocess/P305/ft1/gll_ph_p305_r0246823875_v305.fit
```

DataCatalog location and naming

Logical directory and group template:

```
Data/Flight/Reprocess/<reprocessName>:<dataType>
```

Note that the <dataType> field (following the colon) is a DataCatalog 'group' name, and file names are of the form r<run#>.

Naming examples:

```
/Data/Flight/Reprocess/P305 Group FT1
```

Data Sample

The currently defined data sample (as of) for P305 reprocessing includes:

First run	239557414 (MET), 2008-08-04 15:43:34 (UTC)
Last run	561751200 (MET), 2018-10-20 20:31:47 (UTC)
Backfill	564939451 (MET), 2018-11-26 16:46:00 (UTC)

Bookkeeping

1. (This page): Define ingredients of reprocessing (processing code/configuration changes)
2. Processing History database: <http://glast-ground.slac.stanford.edu/HistoryProcessing/HProcessingRuns.jsp?processingname=P305>
 - a. List of all reprocessings
 - b. List of all data runs reprocessed
 - c. Pointers to all input data files (-> dataCatalog)
 - d. Pointers to associated task processes (-> Pipeline II status)
3. Data Catalog database: <http://glast-ground.slac.stanford.edu/DataCatalog/folder.jsp>
 - a. Lists of and pointers to all output data files
 - b. Meta data associated with each output data product

P305-FITS

This task generates all desired FITS data products.

- A slightly updated task structure has been implemented for this task: the mergeClumps step is now a separate subTask which allows overriding the batch queue parameter for extra long runs. This restructuring required quite a lot of modification related to data passed between job steps (as now certain job steps are in the new subTask).
- Task stored in my github as P305-FITS

Status chronology

This task basically mirrors the P301-FITS task but updating certain packages and expanding the generated data products to include FT1 and LS1.

Please see the associated JIRA for operational notes.

- 2017-09-18: start year 1 production
- 2018-10-18: update the scripts to not fail on new "centos7" systems.

Name	Files	Events	Size	Created (UTC)
EXTENDEDFT1				
EXTENDEDLS1				
FT1				
LS1				

Configuration

Task Location	/nfs/farm/g/glast/u38/Reprocess-tasks/P302-FITS
Task Status	complete
Input Data	MERIT (direct from P301-MERIT task)
spacecraft data	P203 (released 3 June 2014)
Input Run List	ftp://ftp-glast.slac.stanford.edu/glast.u38/Reprocess-tasks/P305-FITS/config/runList.txt
evtClassDefs	N/A

eventClassMap	/nfs/farm/g/glast/u38/Reprocess-tasks/P305-FITS/config/EvtClassDefs_P8R2_HeavyIons_Ribbon.xml
ScienceTools	09-35-02 (1/26/2015)
Code Variants	redhat6-x86_64-64bit-gcc44 (Optimized)
Diffuse Model	N/A
Diffuse Response	N/A
IRFs	N/A
Output Data Products	FT1 , LS1 , EXTENDEDFT1 , EXTENDEDLS1
commonTools	00-02-01

Generation of output data products:

Data Product	destination	data content [1]	event selection [1]	makeFT1	gtselect	gtdiffresp	gtmktime	Notes
EXTENDEDFT1	SLAC	pass8.2_Extended_cuts_L1	pass8.2_Transient_cuts_L1	✓	✗	✗	✓	
FT1	FSSC	pass8_FT1variables	evclass=128	✗	✓	✗	✓	produced from extendedFT1
EXTENDEDLS1	SLAC	pass8.2_Extended_cuts_L1	pass8.2_Transient_cuts_L1	✓	✗	✗	✓	
LS1	FSSC	pass8_LS1variables	evclass=65544	✗	✓	✗	✓	produced from extendedLS1

[1] /afs/slac/g/glast/ground/releases/volume04/evtClassDefs/01-01-04/data

Note on 'Code Variant': The SLAC batch farm contains a mixture of architectures , both hardware (Intel/AMD 64-bit) and software (RHEL5-64, gcc v4.1, etc.). At this time, GlastRelease builds only on RHEL5-32 (RHEL6-64 are built but not yet validated), while ScienceTools builds for RHEL5-64, RHEL6-64.

Timing and Scaling

Approx 20 CPU minutes and 30 wall clock minutes per job (run).