

## LArSoft - Bug #19067

### Trajcluster segfault

02/20/2018 02:53 PM - Will Foreman

<b>Status:</b>	Resolved	<b>Start date:</b>	02/20/2018
<b>Priority:</b>	Normal	<b>Due date:</b>	
<b>Assignee:</b>	Bruce Baller	<b>% Done:</b>	100%
<b>Category:</b>	Reconstruction	<b>Estimated time:</b>	0.00 hour
<b>Target version:</b>	v06_69_00	<b>Spent time:</b>	0.00 hour
<b>Occurs In:</b>	v06_68_00	<b>Co-Assignees:</b>	
<b>Experiment:</b>	LArIAT, LArSoft		

#### Description

I'm noticing that **many** more jobs than usual are encountering segfaults, so I tested the reco over a file that was known to cause it.

In lariatsoft v06\_68\_00 (which sources larreco v06\_54\_02), I'm attempting to reconstruct this data file:  
/pnfs/lariat/data/digit/001/170/lariat\_digit\_r006245\_sr0233\_20160203T041514.root

I'm running this fcl for reconstruction:  
/lariat/app/users/wforeman/lariat\_michels\_debug/RecoTest.fcl

This performs caldata, gaushit, and trajcluster. When excluding trajcluster, the reco finishes; but when I include trajcluster back into the reco chain, I get a seg fault error at event '9245'. Unfortunately it seems trajcluster was stripped of all the helpful debug statements, so I have no idea when or why this segfault occurs within the algorithm.

#### History

##### #1 - 02/20/2018 05:01 PM - Gianluca Petrillo

- Category set to Reconstruction
- Status changed from New to Assigned
- Assignee set to Bruce Baller
- Occurs In v06\_68\_00 added
- Experiment LArSoft added

Thank you for the detailed report.  
For your information:

1. you can set up lariatsoft v06\_68\_00 with e15:debug qualifiers (setup lariatsoft v06\_68\_00 -q e15:debug), which should have no symbol stripping
2. you can run lar with the --trace option, and art will print what it's doing; in this way you should be able to see that the last module to operate is TrajCluster

Anyway, I can reproduce the issue. Backtrace:

```
#0 0x00007ffff69d5023 in std::vector<unsigned int, std::allocator<unsigned int> >::~~vector (this=0x35000000cc, __in_chrg=<optimized out>)
    at /scratch/workspace/art-rel-bld/SLF6/debug/build/gcc/v6_4_0/Linux64bit+2.6-2.12/include/c++/6.4.0/bits/stl_vector.h:426
#1 0x00007ffffe2efd10a in tca::TrajPoint::~~TrajPoint (this=0x350000006c, __in_chrg=<optimized out>) at /scratch/workspace/build-larsoft/v06_68_00/SLF6/debug/build/larreco/v06_54_02/src/larreco/RecoAlg/TCAlg/DataStructs.h:143
#2 0x00007ffffe2f140fc in std::_Destroy<tca::TrajPoint> (__pointer=0x350000006c) at /scratch/workspace/build-larsoft/v06_68_00/SLF6/debug/build/gcc/v6_4_0/Linux64bit+2.6-2.12/include/c++/6.4.0/bits/stl_construct.h:93
#3 0x00007ffffe2f0f762 in std::_Destroy_aux<false>::__destroy<tca::TrajPoint*> (__first=0x350000006c, __last=0x35b3d8e178 <main_arena+88>)
    at /scratch/workspace/build-larsoft/v06_68_00/SLF6/debug/build/gcc/v6_4_0/Linux64bit+2.6-2.12/include/c++/6.4.0/bits/stl_construct.h:103
#4 0x00007ffffe2f0a771 in std::_Destroy<tca::TrajPoint*> (__first=0x350000006c, __last=0x35b3d8e178 <main_arena+88>)
    at /scratch/workspace/build-larsoft/v06_68_00/SLF6/debug/build/gcc/v6_4_0/Linux64bit+2.6-2.12/include/c++/6.4.0/bits/stl_construct.h:126
#5 0x00007ffffe2f040a5 in std::_Destroy<tca::TrajPoint*, tca::TrajPoint> (__first=0x350000006c, __last=0x35b3d8e178 <main_arena+88>)
```

```
at /scratch/workspace/build-larsoft/v06_68_00/SLF6/debug/build/gcc/v6_4_0/Linux64bit+2.6-2.12/include/c++/
6.4.0/bits/stl_construct.h:151
#6 0x00007ffffe2f00f3 in std::vector<tca::TrajPoint, std::allocator<tca::TrajPoint> >::operator= (this=0xba4e
ab0, __x=...)
at /scratch/workspace/build-larsoft/v06_68_00/SLF6/debug/build/gcc/v6_4_0/Linux64bit+2.6-2.12/include/c++/
6.4.0/bits/vector.tcc:196
#7 0x00007ffffe2efd297 in tca::Trajectory::operator= (this=0xba4eab0) at /scratch/workspace/build-larsoft/v06_
68_00/SLF6/debug/build/larsoft/v06_54_02/src/larsoft/RecoAlg/TCAlg/DataStructs.h:166
#8 0x00007ffffdb9c00d6 in tca::SplitTraj (tjs=..., itj=5, pos=39, ivx=3, prt=false) at /scratch/workspace/buil
d-larsoft/v06_68_00/SLF6/debug/build/larsoft/v06_54_02/src/larsoft/RecoAlg/TCAlg/Utils.cxx:2025
#9 0x00007ffffdb917bd5 in tca::SplitAtKink (tjs=..., pfp=..., sep=1, prt=false) at /scratch/workspace/build-la
rsoft/v06_68_00/SLF6/debug/build/larsoft/v06_54_02/src/larsoft/RecoAlg/TCAlg/PPUtils.cxx:1068
#10 0x00007ffffdb99f173 in tca::Match3DVtxTjs (tjs=..., tpcid=..., prt=false) at /scratch/workspace/build-larso
ft/v06_68_00/SLF6/debug/build/larsoft/v06_54_02/src/larsoft/RecoAlg/TCAlg/TCVertex.cxx:1310
#11 0x00007ffffdb919dac in tca::FindPPParticles (fcnLabel=..., tjs=..., tpcid=..., prt=false) at /scratch/works
pace/build-larsoft/v06_68_00/SLF6/debug/build/larsoft/v06_54_02/src/larsoft/RecoAlg/TCAlg/PPUtils.cxx:1310
#12 0x00007ffffe2ec4075 in tca::TrajClusterAlg::RunTrajClusterAlg (this=0x8a31f20, evt=...) at /scratch/workspe
ce/build-larsoft/v06_68_00/SLF6/debug/build/larsoft/v06_54_02/src/larsoft/RecoAlg/TrajClusterAlg.cxx:430
#13 0x00007ffffcfa6e658 in cluster::TrajCluster::produce (this=0x6079970, evt=...) at /scratch/workspace/build-
larsoft/v06_68_00/SLF6/debug/build/larsoft/v06_54_02/src/larsoft/ClusterFinder/TrajCluster_module.cc:169
```

I will not have the time to check this out until at least tomorrow.

Assigning to Bruce Baller, who is the author of that code.

Bruce, if you need the FHiCL configuration file and input file moved somewhere else, let us know.

## #2 - 02/21/2018 08:37 AM - Lynn Garren

- Status changed from Assigned to Resolved

- Target version changed from v06\_68\_00 to v06\_69\_00

Bruce has pushed a change to larsoft develop which resolves this issue.

This includes another change - the production of SpacePoints by TrajCluster has been removed because the quality was inadequate. People should expect data product changes from the CI tests.

## #3 - 02/21/2018 08:48 AM - Lynn Garren

- Status changed from Resolved to Assigned

uboonecode unit tests production.sh and prodsingle\_uboone\_max2 fail

## #4 - 02/21/2018 10:36 AM - Lynn Garren

- Status changed from Assigned to Resolved

- % Done changed from 0 to 100

Problem fixed and tested.