LArSoft - Task #15731

Milestone # 14363 (Assigned): Support detectors with drift direction different than x axis

Task # 15729 (Assigned): Update the reconstruction algorithms to support arbitrary drift direction

Adapt a hit finding algorithm and module to support asymmetric pulses in not-deconvoluted waveforms

03/02/2017 03:45 PM - Gianluca Petrillo

Status:	Closed		**Start date:**	03/02/2017
Priority:	Normal		**Due date:**	
Assignee:	Christoph Alt		**% Done:**	100%
Category:	Reconstruction		**Estimated time:**	0.00 hour
Target version:			**Spent time:**	0.00 hour
Description				
The natural candidate is the most used one (to my knowledge, GausHitFinder).				

History

#1 - 03/30/2017 04:27 PM - Katherine Lato

- Status changed from New to Assigned

- Assignee set to Robert Sulej

#2 - 04/02/2017 05:53 AM - Robert Sulej

- Subject changed from Adapt a hit finding algorithm and module to support a generic drift direction. to Adapt a hit finding algorithm and module to support asymmetric pulses in not-deconvoluted waveforms

- Assignee changed from Robert Sulej to Christoph Alt

- % Done changed from 0 to 30

I modify the subject. Christoph checked that there is no code dependent on the drift direction in the hit finder. Instead we are using gauss hit finder code to develop algorithm finding and fitting hits in the raw waveform, with no devonvolution applied. There are three parts of this task:
- implement hit fitting procedure using gauss hit finder logic, possibly improve it using ideas we have developed for Icarus; this is ongoing
- save resulting parameters of asymmetric fit function to the art::Event; done, to be discussed with LArSoft team / community;
- read the fit parameters in the event display and plot fitted hits over the waveform; started.

I change assignee to Christoph, he is doing most of this work.

#3 - 10/11/2018 11:55 AM - Christoph Alt

- Status changed from Assigned to Closed

- % Done changed from 30 to 100

This is also done.

The "DPRawHitFinder" module finds and fits asymmetric dual phase hits. It lives in larreco:
https://cdcvs.fnal.gov/redmine/projects/larreco/repository/revisions/develop/entry/larreco/HitFinder/DPRawHitFinder_module.cc

The resulting parameters of the asymmetric fit function are saved to the art::Event and read in by the event displayed, see my presentation at the LArSoft coordination meeting: https://indico.fnal.gov/event/14645/contribution/4/material/slides/0.pdf

I close this ticket.