uBooNE Reconstruction - Task #13470

Milestone # 13399 (New): Parent reconstruction milestones/tasks for reconstruction necessary for MCC8 and reconstruction "v6"

Milestone # 13400 (New): MCC8 and "v6" reconstruction development

Milestone # 13406 (New): Vertex Reconstruction

Task # 13428 (New): Vertex Reconstruction - Pandora tasks

Scoring of vertex candidates

08/08/2016 07:23 AM - John Marshall

Status:	New		**Start date:**	08/08/2016
Priority:	Normal		**Due date:**	10/01/2016
Assignee:	Jack Weston		**% Done:**	90%
Category:			**Estimated time:**	0.00 hour
Target version:				

Description
Current status: developing a new metric for scoring vertex candidates, with a metric that tries to assess whether a given candidate would require an implausible 'energy kick' in order to yield the resulting Hit topologies. It's not clear yet how this will interact with the existing Hit r-phi score, but it does seem to introduce some new information.

History

#1 - 11/04/2016 11:12 AM - John Marshall

- % Done changed from 0 to 90

Obtain score to select neutrino interaction Vertex from list of candidate positions. New algorithm uses 2D Clusters and calorimetric info to decide: EnergyKickVertexSelection.
Previously, used distribution of Hits around each candidate to obtain score, then 'beam deweighting' to favour upstream candidates. This alg still available: HitAngleVertexSelection.

New score has three components:
-Energy kick score: assess suitability of candidate by examining transverse components of Cluster energies with respect to candidate position.
-Energy asymmetry score: candidates that bisect a Cluster, or two well-aligned Clusters, can be suppressed.
-Beam deweighting score: unchanged.

Associated pattern recognition performance shown at MicroBooNE collaboration meeting.