LAr1 MC Generation Status

Corey
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Hey Corey, how is that MC generation going?

Not as well as I'd like....

The Good

- Genie Generation Code is 100% complete
- LArG4 code is 100% complete
- MC Truth Extraction code is 75% complete
  - Will be 100% quickly after root starts cooperating!
- Small modifications need to be made to reprocessing code, and sensitivity code does not need to change.
- **Software is ~90% complete.**
- Thanks, Davio, for being so helpful.

The Bad

- **lar1 grid jobs have been unable to run.**
- This problem is higher up than me, so there is nothing I can do except bother the FermiGrid folks.

How long till completion?

- 2 detectors, 2 beam modes, 2 samples per mode (regular/fosc) 8 Genie samples
- LArG4 on half (not on fosc), 4 larg4 samples
- MC Truth extraction on all 8.

Most realistic completion time: **3 to 4 days (real days)** after I get jobs to run on the grid.

By the way, a quick calculation shows that the larg4 step is about 3x faster than the previous simulation's benchmark. Throwing out unuseful particles is making a difference.

Summary of MC Generation Expectations

Near Det (DanielScope)	Time / 100 events (seconds)	File Size / 100 events (MB)	Total Events (ND/DS)	N Times to Run	Total Execution Time (s)	Total File Size (MB)
GENIE	34	0.3	700,000	4	952000	8400
LArG4	485	8	700,000	2	6790000	112000
MCTruth	10	0	700,000	4	280000	0
uBoone	Time / 100 events (seconds)	File Size / 100 events (MB)	Total Events (ND/DS)	N Times to Run	Total Execution Time (s)	Total File Size (MB)
GENIE	32	0.3	1500000	4	1920000	18000
LArG4	700	30	1500000	2.0	21000000	900000
MCTruth	10	0	1500000	4	600000	0
		Total Execution Time:		31542000		
			In days:	365.1		
		Grid time, 25 nodes (d):		**14.6**	(minimum)	
		Grid time, 500 nodes (d):		**0.73**	(optimistic but reasonable)	
		Total Disk Usage (MB):		1038400		
			In TB:	1.0384	<- Big but manageable	