

Simulation Task List

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Tasks and issues tracked

<https://redmine.jlab.org/projects/solid-software>

github Migration should happen

- libsolgem already there
- Any existing SVN should be migrated
- Need to make decisions on external repositories - “official SoLID” versions should be produced

Should be finished and documented

- EC trigger for SIDIS and J/ψ - Ye
- MRPC occupancies, trigger conditions - Sangwha
- SPD - Sangwha

- No progress on integrating data for postprocessing past GEMs
 - libsolgem needs to be extended for all systems
 - Output to art format or art ROOT read in?
- Event mixing formalism need technote and is critical
- Tracking needs to be documented and archived
 - Weizhi agreed to do by end of year

- Jay needs to be given mesh size requirements
- Looks like 8-fold symmetry likely can be used
- Tracking studies need ot be evaluated

- General radiative effects not included
- Hadronic productive from Geant4 is fine

Pion Type	Total Proton xs for theta < 90 deg			Hall D vs. G4 agreement
	Wiser xs	Hall D xs	Geant4 xs	
	(mb)	(mb)	(mb)	(%)
pi0	n/a	31.3	26.8	17
pi-	n/a	20.7	23.5	-12
pi+	n/a	44.4	50.7	-12

Pion Type	Total Deuterium xs for theta < 90 deg			Hall D vs. G4 agreement
	Wiser xs	Hall D xs	Geant4 xs	
	(mb)	(mb)	(mb)	(%)
pi0	189.7	62.5	84.6	-26
pi-	191.6	65.1	73.2	-11
pi+	192.7	65.1	71.3	-9

- J/ψ should get standardized
- Outstanding work to do ^3He cell wall hadronic contributions
- eicRate and Christy/Bosted+LHAPDF6 has small disagreement

- GEMC 3.0 going to very modularized version
 - Input, output (direct to ROOT), detector processing
 - Would be able to do arbitrary work
- Made requests for things like reducing dependencies or making some dependencies optional
- Was sympathetic to our issues
- Requested meetings to address issues

<http://hallaweb.jlab.org/12GeV/SoLID/download/sim/talk/gemcSolidUpdate.pdf>

- J/ψ trigger - Zhiwen
 - Reach will go in science case
- DAQ Simulation
- Sector number
- Baffle shape and material optimization
- GEM optimization for all experiments
- NH3 with magnet?

- Birks effect doesn't seem to be present for anything
- PreR&D postdoc priority assignment
 - ANL
 - SBU
 - Duke
 - Temple

Overall Major Issues

- Studies which could impact science review high priority
 - J/ψ reach
- Event mixing is being done ad hoc and needs to be formalized
- Start focusing on getting coherent simulation for all systems